

Tyr Gly Ile Gly Leu Ser Lys Gly Ala Gln Tyr Gly Pro Lys Glu Val
 340 345 350
 Met Pro Tyr Pro Pro Asp Ser Trp Leu Val Ala Val Trp Val Glu Thr
 355 360 365
 Gly Ile Val Gly Leu Met Leu Tyr Leu Leu Ile His Gly Val Leu Phe
 370 375 380
 Ala Trp Cys Ser Trp Leu Met Phe Arg Ile Met Asn Gln Arg Leu
 385 390 395 400
 Arg Gly Leu Leu Ala Ala Trp Leu Cys Met Asn Ala Gly Phe Phe Ile
 405 410 415
 Ala Ala Tyr Ala Asn Asp Val Met Gln Tyr Pro Asn Ser Ile Ile Val
 420 425 430
 Tyr Thr Gly Phe Ala Leu Cys Ile Ala Gly Pro Tyr Ile Asp Pro Val
 435 440 445
 Met Gln Lys Glu Asp Glu Glu Leu Glu Arg Glu Arg Lys Glu Lys Lys
 450 455 460
 Lys Arg Asp
 465

<210> 7673
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 7673
 Thr Ile Lys Arg Ser Cys Met Gly Asp Ile Asp Ile Leu Asn Lys Phe
 1 5 10 15
 Asp Asn Asp Lys Leu Ile Asp Val Val Lys Asn Tyr Lys Arg Tyr Gly
 20 25 30
 Tyr Asp Asp Glu Leu Arg Asp Tyr Ala Ile Asn Leu Leu Gly Glu Arg
 35 40 45
 Gly Trp Ser Arg Glu Asp Leu Gln Gln Phe Gly Tyr Leu Thr Asn Tyr
 50 55 60
 Asp Tyr Asp Glu Ala Glu Lys Gln Tyr Lys Ala Tyr Asn Arg Asn Ser
 65 70 75 80
 Leu Ile Gly Ile Cys Thr Leu Val Phe Ser Gly Gly Ile Leu Ala Val
 85 90 95
 Val Tyr Leu Ile Phe Leu Ile Leu Ala Tyr Arg Asn Val Ala Lys Phe
 100 105 110
 Tyr Asn Ala Leu Gly His Asn Gln Asp Glu Thr Ala Leu Phe Asn Ala
 115 120 125
 Leu Gly Val Leu Ala Tyr Phe His Leu Lys Gly Arg Met Lys Glu Glu
 130 135 140
 Leu Lys Gly Ile Arg
 145

<210> 7674
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 7674
 Leu Lys Arg Arg Leu Met Thr Gly Glu Leu Asn His Ser Arg Glu Arg
 1 5 10 15
 Leu Glu Lys Gln Lys Ile Lys Asn Val Met Ala Lys Ile Phe Ile Ile
 20 25 30
 Leu Ile Ile Thr Leu Cys Thr Gly Cys Phe Gly Lys Gln His Ser Ser
 35 40 45
 Lys His Asn Asn Val Ser Asn Ile Asn Glu Ser Asp Ile Gln Leu Asp

50		55		60
Ser Leu Pro Leu Thr Lys Tyr Glu Tyr Lys Met Arg Gly Asn Leu Lys				
65		70		75
Asp Asp Ile Gly Asp Lys Leu Gly Ala Ile Glu Asp Tyr Ala Arg Ala				80
	85		90	95
Ile Lys Ile Asp Thr Ser Tyr Asp Thr Ala Tyr Tyr Asn Arg Gly Leu				
	100		105	110
Met Lys Ser Ala Ile Gly Asp Arg Glu Gly Glu Leu Ala Asp Tyr Asn				
	115		120	125
Lys Thr Leu Ser Ile Asn Pro Lys Tyr Leu Lys Ala Tyr Phe Asn Arg				
	130		135	140
Gly Leu Leu Lys Tyr Glu Met Gly Asp Tyr Glu Gly Glu Ile Ala Asp				
145		150		155
Tyr Arg Leu Ala Ile Lys Tyr Cys Lys Pro Asp Ala Asp Ile Tyr Asn				160
	165		170	175
Asn Leu Gly Arg Ala Leu Tyr Asp Leu Glu Arg Phe Lys Glu Ser Ala				
	180		185	190
Glu Ala Tyr Gly Glu Gly Ile Lys Tyr Phe Pro Glu Asp Tyr Arg Leu				
	195		200	205
Tyr Tyr Gly Arg Gly Leu Ala Arg Lys Arg Leu Gly Asp Arg Lys Gly				
210		215		220
Ala Cys Glu Asp Trp Val Lys Ser Ser Glu Leu Gly Cys Thr Gln Ala				
225		230		235
Asn Ile Leu Leu Pro Leu Cys Asp Glu Tyr Ile Lys Glu Glu Asn Asp				240
	245		250	255
Ser Leu Lys Lys Glu Lys Glu Ser Ala Asn Lys Ile Glu				
	260		265	

<210> 7675

<211> 632

<212> PRT

<213> B.fragilis

<400> 7675

Ile Met Asn Arg Asn Leu Leu Met Pro Val Ala Val Ser Leu Ile Leu				
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Leu Ser Gly Cys Lys Tyr Asn Asp Asp Asn Phe Glu Gly Leu Asp Asp				
	20		25	30
Met Thr Gln Pro Thr Asn Leu Met Lys Ile Glu Tyr Thr Leu Thr Asp				
	35		40	45
Ala Asp Tyr Ala Thr Ile Ser Thr Asn Ser Val Asn Lys Asp Ser Ala				
	50		55	60
Ala Asn His Lys Pro Asp Asp Leu Ser Lys Asp Leu Ala Asn Val Lys				
65		70		75
Thr Asn Met Tyr Leu Thr Glu Lys Ile Thr Gly Ala Thr Tyr Ile Pro				80
	85		90	95
Ala Phe Leu Leu Asp Lys Tyr Tyr Thr Ala Asp Lys Gly Ser Ser Ala				
	100		105	110
Lys Ile Thr Tyr Lys Tyr Lys Glu Ala Met Ser Ser Leu Leu Ser Glu				
	115		120	125
Tyr Ala Ser Val Lys Tyr Leu Lys Pro Thr Asp Ala Glu Tyr Lys Leu				
	130		135	140
Val Tyr Gly Glu Asn Ala Phe Ala Pro Tyr Leu Asn Glu Lys Thr Glu				
145		150		155
Gly Gln Met Ser Lys Ile Leu Asn Glu Lys Phe Lys Asp Ala Glu Lys				
	165		170	175
Gly Thr Ala Val Phe Val Asp Tyr Lys Leu Gly Glu Gly Gln Leu Glu				
	180		185	190
Asn Pro Leu Met Trp Gln Asn Phe Glu Ala Leu Pro Thr Gly Asp Leu				

	195		200		205										
Lys	Glu	Leu	Lys	Gly	Trp	Phe	Ile	Ser	Ser	Thr	Gly	Asp	Thr	Gln	Trp
	210					215					220				
Lys	Val	Thr	Ser	Tyr	Asp	Asp	Asn	Gln	Tyr	Val	Gln	Tyr	Ser	Ala	Asn
	225				230						235				240
Gly	Thr	Lys	Gly	Ala	Cys	Val	Gly	Trp	Met	Val	Thr	Pro	Ala	Ile	Ser
				245					250						255
Val	Thr	Ala	Gly	Asp	Tyr	Leu	Ala	Phe	Asp	Val	Thr	Val	Gly	Tyr	Tyr
			260					265					270		
Asn	Ala	Ser	Cys	Leu	Ser	Ile	Leu	Ile	Ser	Glu	Asn	Phe	Asp	Gly	Lys
		275					280					285			
Asn	Val	Gly	Thr	Ala	Asn	Trp	Val	Asp	Val	Thr	Ser	Asp	Phe	Ser	Ile
	290					295					300				
Pro	Thr	Lys	Pro	Thr	Ser	Gly	Tyr	Gly	Thr	Phe	Ala	Ser	Ala	Gly	Lys
	305				310					315					320
Val	Ser	Leu	Ser	Ala	Tyr	Ala	Gly	Lys	Lys	Val	Tyr	Val	Ala	Phe	Lys
				325					330						335
Tyr	Glu	Gly	Asp	Gly	Ala	Asn	Lys	Lys	Thr	Thr	Thr	Tyr	Gln	Ile	Asp
			340					345					350		
Asn	Ile	Met	Val	Gly	Thr	Ser	Ile	Pro	Ala	Asn	Ser	Leu	Ser	Thr	Pro
	355					360						365			
Thr	Tyr	Ala	Val	Lys	Val	Tyr	Asp	Gly	Lys	Asn	Trp	Lys	Asn	Lys	Ser
	370					375					380				
Asn	Ser	Val	Tyr	Val	Leu	Thr	Tyr	Ala	Asp	Tyr	Gly	Asp	Met	Gly	Gln
	385				390				395						400
Ser	Lys	Arg	Tyr	Phe	Thr	Ser	Asp	Val	Pro	Ala	Val	Asn	Tyr	Leu	Pro
				405					410						415
Ala	Tyr	Leu	Ser	Lys	Met	Val	Ala	Tyr	Pro	Val	Asp	Gly	Asp	Ala	Arg
			420					425					430		
Val	Val	Val	Tyr	Arg	Phe	Tyr	Asn	Gly	Lys	Ala	Leu	Asn	Ile	Tyr	Ser
	435						440						445		
Asp	Glu	Tyr	Thr	Tyr	Ser	Ala	Glu	Lys	Ala	Arg	Trp	Glu	Leu	Asn	Thr
	450					455					460				
Arg	Ile	Val	Asp	Lys	Thr	Glu	Gln	Phe	Val	Leu	Ser	Asp	Gly	Lys	Trp
	465				470					475					480
Asn	Phe	Asp	Pro	Ser	Thr	Val	Val	Thr	Leu	Lys	Ala	Glu	Lys	Gly	Asn
				485					490						495
Val	Glu	Ala	Ala	Phe	Tyr	Gln	Ala	Ile	Thr	Asp	Trp	Val	Lys	Glu	
		500					505					510			
Asn	His	Pro	Glu	Tyr	Val	Thr	Ser	Tyr	Gly	Asn	Asn	Asp	Tyr	Tyr	Tyr
		515					520					525			
Gly	Gly	Ser	Ala	Tyr	Asn	Asn	Asn	Phe	Asp	Phe	Arg	Pro	Ser	Ala	Trp
	530					535					540				
Lys	Ala	Gln	Asn	Ala	Ser	Ala	Tyr	Gly	Ser	Met	Ser	Asp	Ala	Asp	Leu
	545				550					555					560
Thr	Lys	Leu	Met	Phe	Glu	Arg	Leu	Pro	Glu	Ala	Phe	Leu	Pro	Gly	Leu
				565					570						575
Lys	Ala	Ile	Tyr	Gly	Ser	Ala	Asp	Val	Val	Glu	Gly	Val	Asp	Val	Phe
		580					585						590		
Tyr	Thr	Ile	Asn	Phe	Ala	Ile	Tyr	Asp	Gly	Ser	Ser	Thr	Thr	Gln	Tyr
	595					600						605			
Thr	Ile	Lys	Tyr	Lys	Val	Thr	Gly	Lys	Gly	Gln	Phe	Glu	Tyr	Val	Ala
	610					615					620				
Asp	Ser	Leu	Thr	Lys	Lys	Val	Glu								
	625				630										

<210> 7676

<211> 464

<212> PRT

<213> B.fragilis

<400> 7676

Lys	Thr	Ile	Arg	Thr	Met	Glu	Asp	Asn	Lys	Asn	Lys	Ser	Glu	Val	Gln
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Ala	Gln	Glu	Thr	Val	Gln	Val	Ser	Tyr	Lys	Glu	Lys	Asn	Gly	Glu	Ser
			20					25					30		
Ser	Leu	Ala	Ser	Ala	Leu	Asp	Val	Leu	Ser	Arg	Phe	Gly	Gly	Phe	Asn
		35					40					45			
Phe	Leu	Glu	Ser	Thr	Val	Asp	Gly	Val	Gln	Asn	Leu	Asn	Pro	Glu	Arg
	50					55					60				
Lys	Ala	Arg	Lys	Lys	Ile	Phe	Leu	Thr	Asp	Glu	Gln	Lys	Gln	Glu	Glu
65					70					75					80
Arg	Glu	Val	Leu	Lys	Asn	Lys	Ile	Asp	Met	Trp	Ile	Asp	Leu	Leu	Asn
				85					90					95	
Ser	Ser	Ser	Ala	Val	Thr	Glu	Met	Ile	Ala	Thr	Ser	Lys	Ala	Lys	Ser
			100					105					110		
Glu	Ala	Ala	Ala	Ser	His	Leu	Ala	Lys	Ser	Gln	Leu	Val	Ala	Val	Gln
		115					120					125			
Ser	Val	Arg	Asp	Met	Glu	Gln	Ala	Tyr	Arg	Gly	Val	Met	Leu	Phe	Tyr
	130					135					140				
Lys	Asn	Thr	Glu	Ala	Asp	Lys	Val	Asn	Asn	Val	Thr	Ile	Val	Asn	Ala
145					150					155					160
Ser	Lys	Glu	Gln	Leu	Thr	Asp	Leu	Asp	Asn	Pro	Arg	Phe	Ile	Asp	Phe
				165					170					175	
Val	Ala	Arg	Glu	Leu	Lys	Gln	Asn	Tyr	Asp	Lys	Leu	Asp	Leu	Arg	Gln
			180					185					190		
Asn	Tyr	Ser	Leu	Leu	Ala	Ile	Pro	Gly	Tyr	Leu	Gly	Ser	Asn	Lys	Val
		195					200					205			
Leu	Glu	Lys	Trp	Ala	Lys	Ile	Ala	Tyr	Glu	Asn	Lys	Val	Met	Leu	Tyr
	210					215					220				
Thr	Asp	Phe	Ala	Asp	Leu	Asp	Lys	Pro	Glu	Asp	Val	Val	Glu	Leu	Phe
225					230					235					240
Ser	Ser	Ser	Asn	Met	Ala	Ser	Gly	Glu	Ala	Phe	Lys	Ser	Asn	Thr	Cys
				245					250					255	
Met	Thr	Cys	Asn	Trp	Leu	Val	Gly	Arg	Ala	Gly	Tyr	Arg	Glu	Ile	Gly
			260					265					270		
Glu	Glu	Glu	Asp	Leu	His	Ile	Ser	Pro	Ser	Ile	Ala	Leu	Met	Gly	Lys
	275						280					285			
Val	Tyr	Thr	Thr	Leu	Met	Ser	Gln	Val	Thr	Ala	Gly	Lys	Lys	Tyr	Gly
	290					295					300				
Gly	Ile	Asn	Glu	Ile	Asp	Ala	Val	Val	Phe	Pro	Leu	Lys	Lys	Ser	Glu
305					310					315					320
Ile	Ser	Gln	Leu	Glu	Lys	Met	Gly	Leu	Ile	Pro	Met	Val	Asn	Glu	Tyr
				325					330					335	
Gly	Lys	Val	Met	Ala	Phe	Ser	Ala	Lys	Thr	Leu	Phe	Asn	Gly	Asp	Asn
			340					345					350		
Leu	Gly	Leu	Gln	Thr	Tyr	Ser	Val	Val	Arg	Val	Phe	Asp	Tyr	Ile	Thr
		355					360					365			
Lys	Val	Leu	Phe	Asp	Phe	Leu	Asn	Arg	Arg	Ser	Phe	Glu	Asn	Trp	Ser
	370					375					380				
Ser	Lys	Thr	Glu	Arg	Asp	Leu	Arg	Gly	Gln	Ile	Val	Gln	Tyr	Leu	Asp
385					390					395					400
Ser	Val	Gln	Gly	Ala	Asp	Arg	Leu	Ile	Glu	Lys	Phe	Lys	Ile	Ile	Arg
				405					410					415	
Phe	Glu	Gln	Asp	Gln	Lys	Gln	Lys	Asp	Arg	Ile	Tyr	Leu	Asp	Ile	His
			420					425					430		
Met	Thr	Pro	Phe	Phe	Pro	Ala	Lys	Ser	Phe	Val	Ile	Lys	Leu	Asp	Gly
		435					440						445		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

Thr Lys Gly Asp Asp Gly Thr Asn Trp Asn Thr Asn Tyr Glu Gln Ala
 450 455 460

<210> 7677
 <211> 801
 <212> PRT
 <213> B.fragilis

<400> 7677

Ile Gly Gln Ser Met Asp Arg Ile Leu His Asp Val Asp Asn Ala His
 1 5 10 15
 Lys Ile Leu Gln Leu Thr Ser Asp Thr Leu Ile Leu Val Asp Lys Asn
 20 25 30
 Gly Thr Cys Leu Asp Ile Asp Pro His Ser Asp Leu Trp Phe Leu Gln
 35 40 45
 Glu Asp Arg Leu Leu Gly Lys Asn Leu Phe Asn Leu Leu Pro Asp His
 50 55 60
 Thr Phe Gln Lys Leu Leu Pro Asp Phe Lys Arg Val Thr Gln Gln Gly
 65 70 75 80
 Ile Thr Val Asn Arg Asn Tyr Arg Leu Pro Leu Glu Gly Gly Glu Thr
 85 90 95
 Tyr Tyr Phe Lys Cys Ile Met Gln Pro Tyr Asp Cys Asp Lys Val Leu
 100 105 110
 Cys Gln Tyr Arg Asp Ile Thr Ala Arg Asn Asn Val Lys Leu Gln Leu
 115 120 125
 Glu Arg Thr Asn Tyr Asp Leu Lys Glu Ile Gln Lys Ala Ala Gln Ile
 130 135 140
 Gly Gln Trp Lys Tyr Ser Ser Arg Glu Arg Thr Phe Tyr Tyr Arg Gly
 145 150 155 160
 Tyr Asn Gly Ile Val Cys Thr Glu Glu Glu Arg Ser Ile Asn Phe Gln
 165 170 175
 Asp Tyr Tyr Glu Thr Ile Leu Ser Glu Asp Leu Pro Ala Val Asn Thr
 180 185 190
 Trp Met Glu Ala Asn Arg Arg Glu Leu Leu Lys Glu Tyr Ile Glu Tyr
 195 200 205
 Arg Ile Leu Leu Glu Gly Gln Val Tyr Tyr Met Arg Gln Gln Cys Tyr
 210 215 220
 Leu Arg Asn Glu Glu Glu Asp Gly Asn Ile Val Leu Glu Gly Tyr Ile
 225 230 235 240
 Gln Asn Ile Thr Asp Ile Gln Arg Lys Arg Asn Asp Ile Asn Thr Leu
 245 250 255
 Thr His Ala Ile Asn Asn Ala Lys Glu Ser Val Tyr Ala Ala Arg Arg
 260 265 270
 Asp Gly Thr Leu Ile Phe Ala Asn Arg Gln Phe Arg Leu Asn His Arg
 275 280 285
 Ile Ala Glu Gln Ala Asp Leu Ser Leu Ile Arg Val Phe Asp Val Val
 290 295 300
 Gly Asp Met Thr Cys Ile Glu Asp Trp Glu Glu Arg Tyr Arg Ser Ile
 305 310 315 320
 Arg Glu Gly Gln Thr Leu Asn Phe Leu Ala Tyr Gln Pro Leu Lys His
 325 330 335
 Asp Lys Asn Thr Leu Ala Phe Glu Gly Thr Met Tyr Ser Val Thr Thr
 340 345 350
 Asp Asp Gly Glu Glu Thr Phe Trp Ser Phe Thr His Asp Ile Ser Glu
 355 360 365
 Arg Ile Arg Tyr Glu Ser Gln Ile Lys Arg Phe Asn Arg Ile Met Asp
 370 375 380
 Thr Thr Met Glu Asn Ile Pro Ala Gly Ile Val Val Lys Asp Ile Glu
 385 390 395 400

Asn Asp Phe Arg Tyr Ile Tyr Arg Asn Arg Glu Ser Tyr Asn Arg Asp
 405 410 415
 Ile Ser Ser Glu Asn Ala Ile Gly Met Asn Asp Phe Asp Tyr Tyr Pro
 420 425 430
 Pro Glu Met Ala Gln Gln Lys Arg Lys Glu Asp Met Glu Ile Ala Ala
 435 440 445
 Thr Gly Lys Gly Met His Trp Ile Met Glu Gly Lys Asp Lys Asn Gly
 450 455 460
 Asn Leu Leu Ile Leu Asp Lys Gln Lys Ile Met Val Glu Ser Glu Asp
 465 470 475 480
 Phe Ser Pro Ile Ile Val Ser Ile Glu Trp Asp Ile Thr Gln Leu Glu
 485 490 495
 Leu Met Arg Arg Glu Leu Ile Glu Ser Lys Glu Lys Ala Glu Thr Ser
 500 505 510
 Asp Lys Leu Lys Ser Ala Phe Leu Ala Asn Met Ser His Glu Ile Arg
 515 520 525
 Thr Pro Leu Asn Ala Ile Val Gly Phe Ser Arg Ile Ile Ser Glu Ser
 530 535 540
 Asp Asn Ala Glu Glu Arg Arg Glu Tyr Tyr Glu Ile Val Asp Ala Asn
 545 550 555 560
 Asn Glu Arg Leu Leu Gln Leu Ile Asn Glu Ile Leu Asp Leu Ser Lys
 565 570 575
 Ile Glu Ser Gly Ile Val Glu Phe Thr Tyr Gly Pro Val Arg Leu His
 580 585 590
 Thr Leu Cys Lys Glu Ile His Asp Ala His Val Phe Arg Cys Pro Gln
 595 600 605
 Gly Val Glu Leu Arg Phe Asp Ser Pro Asp Glu Ala Leu Ser Ile His
 610 615 620
 Ser Asp Lys Asn Arg Ile Phe Gln Val Phe Ser Asn Leu Ile Gly Asn
 625 630 635 640
 Ala Phe Lys Phe Thr Thr Glu Gly Ser Val Ser Tyr Gly Tyr Lys Gln
 645 650 655
 Glu Gly Glu Arg Val Val Phe Tyr Val Lys Asp Thr Gly Leu Gly Ile
 660 665 670
 Glu Pro Glu Lys Leu Gly Arg Val Phe Gln Arg Phe Ala Lys Leu Asn
 675 680 685
 Asn Phe Ala Gln Gly Thr Gly Leu Gly Leu Ser Ile Cys Lys Thr Ile
 690 695 700
 Ile Glu Arg Leu Gly Gly Glu Ile Ala Val Ser Ser Glu Val Gly Thr
 705 710 715 720
 Gly Thr Thr Phe Thr Phe Trp Leu Pro Leu Glu Asn Val Ile Gln Asp
 725 730 735
 Thr Glu Thr Gly Thr Asn Ser His Leu Pro Arg Arg Ser Arg Arg Asn
 740 745 750
 Thr Ala Val Gly Ser Ala Pro Gly Gln Arg Gly Asn Asp Gly Lys Gly
 755 760 765
 Arg Gly Pro Ser Gly Asn Arg Ser Arg Asn Gly Glu Ser His His Thr
 770 775 780
 Asp Ser Arg Arg His Arg Gln Gln Leu Arg Pro Ala Glu Arg Tyr Ser
 785 790 795 800
 Gly

<210> 7678

<211> 154

<212> PRT

<213> B.fragilis

<400> 7678

Lys Gln Lys Arg Gln Met Ala Ile Leu Glu Tyr Gly Ile Gly Gly Asn
 1 5 10 15
 Glu Val Lys Val Asp Thr Ser Glu Ala Ile Ala Asn Ile Pro Glu Asn
 20 25 30
 Arg Ser Leu Ile Val Glu Gln Leu Thr Ala Asp Glu Pro Val Thr Pro
 35 40 45
 Glu Ala Val Lys Gly Leu Ser Thr Ile Glu Glu Val Phe Ala His Phe
 50 55 60
 Leu Pro Asn Ile Asp Val Glu Phe Glu Asn Glu Glu Gly Gln Pro Val
 65 70 75 80
 Lys Glu Asn Phe Arg Phe Ser Ser Val Ala Asp Phe Ser Val Lys Asn
 85 90 95
 Met Thr Gln Asn Ser Pro Phe Leu His Lys Leu Asp Thr Glu Lys Thr
 100 105 110
 Phe Tyr Glu Gly Met Val Thr Gln Leu Arg Ser Asn Lys Val Leu Gln
 115 120 125
 Arg Val Leu Glu Asn Pro Glu Ser Lys Lys Ala Phe Ile Ser Ala Leu
 130 135 140
 Glu Ala Leu Ser Asn Glu Leu Lys Thr Glu
 145 150

<210> 7679

<211> 934

<212> PRT

<213> B.fragilis

<400> 7679

Leu Thr Lys Arg Ile Met Arg Arg His Leu Ile His Phe Leu Leu Val
 1 5 10 15
 Ala Val Leu Thr Val Cys Ser Ala Ala Thr Ala Ile Ala Gln Val Thr
 20 25 30
 Val Lys Gly Gln Val Val Asp Ala Glu Thr Gly Glu Pro Leu Ile Gly
 35 40 45
 Ala Ala Val Thr Ile Val Gly Thr Thr Gln Gly Ser Val Thr Asn Leu
 50 55 60
 Asp Gly Met Phe Thr Gln Lys Ala Ala Ser Gly Ser Thr Leu Leu Ile
 65 70 75 80
 Lys Tyr Leu Gly Tyr Lys Glu Phe Ser Lys Lys Ile Thr Gln Lys Gly
 85 90 95
 Gly Thr Glu Asp Leu Gly Val Ile Lys Met Ala Ala Asp Ala Met Val
 100 105 110
 Leu Asn Asp Val Ile Ile Thr Ser Ser Val Ala Val Ser Arg Lys Thr
 115 120 125
 Pro Val Ala Val Ser Thr Val Asp Pro Val Phe Ile Glu Glu Lys Leu
 130 135 140
 Gly Thr Gln Glu Phe Pro Glu Val Leu Lys Ser Thr Pro Gly Ile Tyr
 145 150 155 160
 Ala Thr Lys Gln Gly Gly Gly Phe Gly Asp Ser Lys Val Asn Ile Arg
 165 170 175
 Gly Phe Lys Thr Glu Asn Ser Ala Met Met Ile Asn Gly Val Pro Met
 180 185 190
 Asn Asp Met Glu Trp Gly Gly Ile Tyr Trp Ser Asn Trp Ala Gly Leu
 195 200 205
 Ser Asp Val Thr Arg Ser Met Gln Val Gln Arg Gly Leu Gly Ala Ser
 210 215 220
 Lys Val Ala Ala Pro Ser Val Gly Gly Ser Ile Asn Ile Val Thr Asn
 225 230 235 240
 Thr Ile Asp Ala Asn Lys Gly Gly Phe Val Ser Tyr Gly Met Gly Asn
 245 250 255

Asp	Gly	Leu	Asn	Lys	Ile	Leu	Phe	Lys	Val	Ser	Thr	Gly	Leu	Thr	Lys
		260						265					270		
Ser	Gly	Trp	Ala	Met	Thr	Leu	Leu	Gly	Gly	Lys	Thr	Trp	Ala	Asp	Gly
		275						280					285		
Tyr	Ile	Gln	Gly	Thr	Asn	Tyr	Glu	Ala	Tyr	Asn	Trp	Phe	Val	Asn	Ile
		290						295				300			
Thr	Lys	Arg	Phe	Asn	Asp	Asn	His	Gln	Leu	Ser	Phe	Thr	Ala	Phe	Ala
305						310					315				320
Ala	Pro	Gln	Trp	His	Asn	Gln	Arg	Gly	Asn	Lys	Asp	Gly	Leu	Thr	Ile
				325						330				335	
Glu	Gly	Trp	Gln	Glu	Val	Ala	Lys	Asn	Tyr	Met	Asn	Gly	Glu	Lys	Pro
			340						345				350		
Tyr	Arg	Tyr	Asn	Pro	Thr	Tyr	Gly	Phe	Gly	Leu	Asn	Gly	Gln	Arg	Lys
		355						360				365			
Ser	Ser	Ala	Tyr	Asn	Val	Tyr	Asn	Lys	Pro	Gln	Leu	Ser	Leu	Asn	His
		370					375				380				
Leu	Trp	Gln	Ile	Asn	Glu	Lys	Ser	Ser	Leu	Ser	Thr	Ala	Leu	Tyr	Ala
385						390					395				400
Ser	Ile	Gly	Arg	Gly	Tyr	Gly	Tyr	Ser	Gly	Gln	Gly	Leu	Thr	Ser	Ala
				405					410					415	
Asp	Arg	Ser	Asn	Trp	Tyr	Gly	Ser	Asn	Asn	Gly	Asn	Leu	Asn	Met	Thr
			420					425					430		
Phe	Arg	Lys	Ala	Asp	Gly	Thr	Phe	Ala	Tyr	Asp	Glu	Ile	Tyr	Ala	Leu
		435						440				445			
Asn	Glu	Ala	Ser	Glu	Asn	Gly	Ser	Val	Met	Ala	Met	Ser	Lys	Ser	Lys
		450				455					460				
Asn	Phe	His	Asn	Trp	Tyr	Gly	Leu	Leu	Ser	Thr	Tyr	Thr	Thr	Lys	Phe
465						470					475				480
Gly	Asp	Tyr	Phe	Asp	Phe	Tyr	Gly	Gly	Ile	Asp	Tyr	Arg	Tyr	Tyr	Lys
				485					490					495	
Gly	Thr	His	Thr	Asn	Glu	Leu	Val	Asp	Leu	Tyr	Gly	Gly	Asp	Phe	Tyr
				500				505					510		
Val	Asp	Ser	Ser	Ser	Arg	Lys	Ser	Val	Leu	Ala	Ser	Asn	Asn	Ala	Ala
		515						520					525		
Ala	Ala	Ala	Gly	Ser	Ser	Phe	Val	Asn	Gln	Lys	Leu	Lys	Val	Gly	Asp
		530				535						540			
Ile	Val	Tyr	Arg	Asp	Phe	Asp	Gly	Tyr	Val	Met	Ser	Glu	Gly	Val	Phe
545						550					555				560
Ala	Gln	Gly	Glu	Tyr	Asn	Arg	Asp	Lys	Leu	Ser	Ala	Phe	Ile	Ser	Gly
				565					570					575	
Ser	Val	Ser	Asn	Thr	Gly	Tyr	Trp	Arg	Tyr	Asp	Arg	Phe	Tyr	Tyr	Asp
			580					585					590		
Lys	Ala	His	Ala	Lys	Ser	Lys	Thr	Val	Asn	Phe	Ile	Gly	Trp	Asn	Ala
		595					600					605			
Lys	Gly	Gly	Leu	Asn	Tyr	Asn	Leu	Thr	Glu	Asn	His	Asn	Val	Phe	Ala
		610				615					620				
Asn	Ile	Gly	Tyr	Ile	Ser	Arg	Ala	Pro	Phe	Phe	Ser	Gly	Gly	Ala	Phe
625						630					635				640
Leu	Asn	Ser	Thr	Val	Ser	Asn	Ala	Thr	Asn	Pro	Asp	Ala	Val	Asn	Glu
				645					650					655	
Lys	Val	Phe	Ser	Phe	Glu	Ile	Gly	Tyr	Gly	Tyr	Arg	Ser	Ser	Phe	Leu
		660						665					670		
Thr	Val	Asn	Ile	Asn	Ala	Tyr	His	Thr	Arg	Trp	Met	Asp	Lys	Thr	Thr
		675						680					685		
Thr	Arg	Ser	Gln	Asp	Ile	Thr	Asn	Tyr	Tyr	Glu	Gly	Ser	Leu	Ser	Glu
		690				695					700				
Pro	Tyr	Asp	Ala	Ser	Lys	Leu	Val	Ser	Thr	Lys	Ser	Val	Ile	Asn	Met
705						710					715				720
Gln	Gly	Val	Asn	Ala	Leu	His	Gln	Gly	Val	Glu	Leu	Asp	Phe	Val	Ala

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725 730 735
 Lys Pro Phe Gln Trp Leu Asp Leu Ser Gly Met Phe Ser Ile Gly Asn
 740 745 750
 Trp Arg Trp Asp Ser Asn Ala Ser Gly Ser Phe Thr Val Glu Gly Gln
 755 760 765
 Phe Val Asn Ser Ala Ser Ile Lys Gly Ser Asp Gly Lys Asp Val Thr
 770 775 780
 Val Leu Val Asn Ala Ala Asn Gly Leu Glu Pro Gly Thr Met Lys
 785 790 795 800
 Leu Asn Leu Lys Asp Val Lys Val Gly Gly Ser Ala Gln Thr Thr Ala
 805 810 815
 Ala Leu Gly Ala Thr Phe Lys Ile Asp Lys Ala Leu Arg Leu Gly Ile
 820 825 830
 Asp Trp Asn Leu Tyr Ala Arg Asn Tyr Ala Asp Trp Ser Leu Asn Ser
 835 840 845
 Asn Asp Leu Val Met Asn Ser Glu Lys Asp Phe Ser Thr Pro Trp Arg
 850 855 860
 Ile Pro Thr Ala Ser Thr Phe Asp Leu Asn Ala Ser Tyr Lys Phe Asn
 865 870 875 880
 Phe Gly Lys Leu Asn Ala Val Leu Ser Gly Asn Val Asn Asn Leu Phe
 885 890 895
 Asp Gln Thr Tyr Ile Ser Asp Ala Thr Asp Gly Ser Asn His Asp Trp
 900 905 910
 Lys Thr Ala Tyr Asn Val Phe Tyr Gly Phe Gly Arg Thr Tyr Ser Leu
 915 920 925
 Arg Leu Lys Val Asn Phe
 930

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 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 7680
 Ala Ser Phe Gly Ser Cys Arg Leu Leu Tyr Met Cys Glu Leu Phe Gly
 1 5 10 15
 Ala Val Cys Lys Leu Val Cys Met Ala Leu Gly Thr Pro Phe Phe Leu
 20 25 30
 Cys Lys Val Phe Ile Val Trp Leu Ala Tyr Cys Ile Phe Val Ser Cys
 35 40 45
 Arg Leu Asn Tyr Trp Leu Gln Tyr Ser Asn Tyr Leu Phe Ile Leu Leu
 50 55 60
 Trp Gly Ser Cys Asp Lys Tyr Arg Ser Tyr Asn Ser Val Gly Ser Ile
 65 70 75 80
 Lys Leu Ser Phe

<210> 7681
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 7681
 Gly Ala Ile Gly Thr Leu Arg Lys Lys Ala Asn Leu Ser Thr Thr Glu
 1 5 10 15
 Ala Thr Glu Met Met Glu Ile Asp Arg Ser Leu Leu Ser Lys Pro Glu
 20 25 30
 His Gly Lys Tyr Val Ser Ile Asp Lys Leu Ala Glu Ile Ile Thr Tyr
 35 40 45

Asn Ile Ser Phe Ile Arg Gly Asn Ser Lys Gly Arg Ile Ser Gln Gln
 50 55 60
 Glu Ile Leu Asn Glu Ile Thr Thr
 65 70

<210> 7682

<211> 495

<212> PRT

<213> B.fragilis

<400> 7682

Ile Lys Asn Gly Tyr Ala Met Ile Glu Phe Ile Asp Pro Asn Ser Asn
 1 5 10 15
 Lys Leu Val Ser Ser Gly Pro Thr Met Ala Arg Lys Ala Tyr Tyr Ile
 20 25 30
 His Gly Thr Thr Ser Asp Asn Asp Arg Trp Ser Asn Tyr Pro Ser Thr
 35 40 45
 Val Gln Gln Leu Asn Arg Ile Ala Phe Gly Ile Gly Val Asp Lys Asn
 50 55 60
 Asp Thr Glu Gly Ile Asn Asp Met Gly Ser Glu Lys Phe Lys Glu Ala
 65 70 75 80
 Cys Cys Asp Phe Ser Phe Glu Trp Gly Asn Asn Gly Ile Leu Lys Ala
 85 90 95
 Gly Asn Asn Trp Phe Leu Asn Thr Val Glu Asp Arg Arg Ile Ala Ser
 100 105 110
 Glu Lys Leu Ile Glu His Ile Asn Gly Asn Ile Gly Lys Cys Glu Glu
 115 120 125
 Val Val Leu Ile Gly His Ser His Gly Gly Asn Val Ala Ile Gln Ala
 130 135 140
 Ala Asp Lys Ile Phe Ser Lys Ile Pro Ala Val Lys Arg Val Phe Val
 145 150 155 160
 Leu Thr Ile Gly Thr Pro Ala Phe Asn Arg Leu Phe Ile Thr Ser Tyr
 165 170 175
 Ile Asn Asn Lys Asn Leu Ile Thr Phe Asn Glu Lys Val Ser Glu Lys
 180 185 190
 Ile Leu Tyr Leu Gly Lys Asp Tyr Val Val Pro Val Ile Lys Leu Gly
 195 200 205
 Arg Lys Phe Trp Gly Pro Leu Gly Ile Phe Leu Tyr Ile Asn Cys Glu
 210 215 220
 Asn Pro Ala Thr Trp Lys Asn Lys Asp Lys Ile Thr His Ile Ala Leu
 225 230 235 240
 Trp Asn Lys Lys Asp His Val Asp Asp Met Ala Trp Val Leu Asp Arg
 245 250 255
 Asn Lys Tyr Phe Pro Tyr His Gly Met Thr Asn Asn Ser Ala Tyr Phe
 260 265 270
 Thr Asn Ser Ile Thr Asp Asn Val Glu Phe Asp Phe Ala Pro Ala Asp
 275 280 285
 Ile Arg Asp Tyr Tyr Lys Arg Glu Ile Lys Pro Phe Ala Glu Trp Leu
 290 295 300
 Ala Asn Leu Asp Tyr Leu Arg Phe Cys Leu Val Asp Leu Arg Leu Lys
 305 310 315 320
 Gly Tyr Asp Leu Pro Lys Met Pro Thr Leu Leu Thr Tyr Lys Glu Tyr
 325 330 335
 Ile Val Arg Arg Lys Lys Met Glu Ala Ser Lys Leu Glu Glu Lys Lys
 340 345 350
 Tyr Val Asn Glu Arg Asp Ala Leu Arg Val Asp Ile Pro Lys Pro Lys
 355 360 365
 Pro Ile Met Met Cys Ala Ser Thr Arg Leu Arg Glu Glu Ala Asn Asp
 370 375 380

Leu Gln Glu Leu Phe Lys Ser Thr Asn Gly Phe Tyr Gln Phe Met Thr
 385 390 395 400
 Asp Ile Asp Glu Ala Lys Lys Asp Arg Ser Lys Val Val Asp Thr Gln
 405 410 415
 Met Val Ile Asp Ile Tyr Lys Gln Lys His Pro Glu Ile Gln Ala Ile
 420 425 430
 Glu Glu Ile Lys Gln Glu Met Tyr Arg Glu Thr Glu Phe Leu Glu Lys
 435 440 445
 Ala Met Ala Ile Tyr Leu Leu Asp Asn Thr Ser Phe Gly Glu His Gly
 450 455 460
 Phe Asp Leu Ala Asn Pro Lys Leu Ile Glu Lys Ala Ile Asn Asp Gly
 465 470 475 480
 Arg Ile Lys Pro Phe Pro Asn Ala Arg Asn Ile Asn Thr Glu Phe
 485 490 495

<210> 7683
 <211> 262
 <212> PRT
 <213> B.fragilis

<400> 7683

Tyr Arg Ile Leu Ile Asn Met Lys Asn Ile Ile Leu Ile Ile Leu Val
 1 5 10 15
 Leu Leu Ser Ser Cys Gly Phe Ser Gln Arg Gln Asn Asn Trp Arg Asp
 20 25 30
 Gly His Val Glu Leu Asp Ser Ile Pro Leu Thr Ala Tyr Glu Tyr Lys
 35 40 45
 Glu Arg Gly Lys Arg Lys Ser Ala Asn Gly Asp Lys Gln Gly Ala Ile
 50 55 60
 Asp Asp Tyr Thr Arg Ala Ile Met Val Glu Pro Thr Tyr Asp Thr Ala
 65 70 75 80
 Tyr His Asn Arg Gly Val Val Arg Ala Asp Ile Gly Tyr Tyr Lys Asp
 85 90 95
 Ala Ile Leu Asp Tyr Thr Lys Ala Ile Glu Ile Asn Pro His Phe Ala
 100 105 110
 Ala Ser Tyr Phe Ser Arg Ala Asn Ala Lys Val Asp Leu Arg Asp Asn
 115 120 125
 Lys Gly Ala Leu Ser Asp Tyr Ser Lys Ala Ile Glu Leu Asn Pro Arg
 130 135 140
 Phe Ile Asp Pro Tyr Val Asn Arg Gly Val Leu Lys Ser Glu Met Gly
 145 150 155 160
 Asp Tyr Glu Gly Glu Ile Ala Asp Tyr His Leu Ala Ile Lys His Cys
 165 170 175
 Glu Pro Ser Val Asn Leu Tyr Asn Asn Leu Gly Arg Ala Leu Tyr Ala
 180 185 190
 Leu Glu Arg Phe Lys Glu Ser Ala Glu Ala Tyr Gly Glu Gly Ile Lys
 195 200 205
 Tyr Phe Pro Glu Asp Tyr Arg Leu Tyr Tyr Gly Arg Gly Leu Ala Arg
 210 215 220
 Lys Arg Thr Gly Asp Lys Lys Gly Ala Cys Glu Asp Trp Met Lys Ser
 225 230 235 240
 Ser Glu Leu Gly Cys Val Glu Ala Asn Leu Leu Leu Pro Leu Cys Lys
 245 250 255
 Glu Cys Asp Thr Lys Lys
 260

<210> 7684
 <211> 60
 <212> PRT

[illegible]

Arg	Phe	Ser	Ile	Lys	Phe	Ile	Phe	Ser	Lys	Ile	Ser	Ser	Arg	Tyr	Pro
1				5					10					15	
Tyr	Ser	Glu	Glu	Tyr	Lys	Lys	Val	Gly	Ala	Ala	Arg	Lys	Gln	Asn	Leu
			20					25					30		
Ser	Asn	Thr	Met	Leu	Leu	Thr	Asp	Phe	Gln	Asn	Phe	Leu	Tyr	Ile	Ser
		35					40					45			
Tyr	Tyr	Ile	Ala	Leu	Pro	Asp	Asn	Lys	Gly	Ser	Arg				
	50					55					60				

<211> 771

<213> B.fragilis

Tyr	Ser	Asn	Met	Lys	Tyr	Met	Gly	Asn	Ser	Leu	Asn	Lys	Asn	Lys	Glu
1				5					10					15	
Trp	Ser	Val	Thr	Asn	Ser	Pro	Ile	Ile	Lys	Leu	Lys	Val	Asp	Lys	Lys
			20					25					30		
Glu	Pro	Lys	Phe	Asn	Ala	Thr	Glu	Ala	Val	Lys	Ile	Arg	Ile	Thr	Ala
		35					40					45			
Glu	Cys	His	Asn	Val	Thr	Ile	Pro	Lys	Asn	Gly	Leu	Glu	Tyr	Glu	Trp
	50					55					60				
Ser	Tyr	Val	Asp	Ser	Thr	Gly	Phe	Met	Lys	Ser	Phe	Thr	Thr	Lys	Lys
65					70					75				80	
Gly	Val	Val	Met	Leu	His	Cys	Pro	Asn	Phe	Cys	Gly	Arg	Val	Met	
				85					90				95		
Thr	Ile	Lys	Val	Lys	Val	Asn	Leu	Glu	Ile	Ser	Lys	Phe	Asp	Glu	Lys
			100					105					110		
Ile	Lys	Phe	Ser	Ser	Phe	Asp	Phe	Gly	Lys	Phe	Asp	Thr	Leu	Glu	Asp
		115					120					125			
Thr	Ile	Glu	Ile	Lys	Pro	Gln	Cys	Asn	Lys	Lys	Leu	Ser	Asp	Asn	Ala
	130					135					140				
Glu	Trp	Leu	Pro	Asp	Glu	Val	Glu	Met	Pro	Asn	Cys	Val	Gln	Ser	Ser
145					150					155					160
Val	Thr	Leu	Tyr	Gly	Tyr	Asn	Gly	Ser	Glu	Met	Gly	Leu	Val	Arg	Met
				165					170					175	
Ile	Lys	Glu	Lys	Gly	Lys	Ile	Ile	Trp	Lys	Gly	Glu	Asp	Lys	Val	Met
				180				185					190		
Val	Arg	Asp	Asn	Val	Val	Ser	Ala	Leu	Phe	Asn	Arg	Asn	His	Cys	Thr
		195					200					205			
Ser	Ser	Thr	Ala	Asp	Asp	Ser	Ile	Tyr	Thr	Leu	Gln	Phe	Gln	Leu	Thr
						215					220				
Asp	Ala	Arg	Asn	Gly	Ser	Leu	Leu	Lys	Ser	Tyr	Ser	Arg	Asp	Tyr	Thr
225					230					235					240
Ile	Lys	Gly	Arg	Glu	Ala	Ile	Lys	Pro	Leu	Ala	Gly	Cys	Pro	Ile	Gln
				245					250					255	
Pro	Val	Val	Val	Gly	Asp	Ile	Thr	Ile	Ala	Glu	Asn	Asn	Phe	Lys	Pro
				260				265					270		
Cys	Lys	Tyr	Thr	Gln	Ile	Asp	Val	Glu	Tyr	Thr	Lys	Asp	Lys	Glu	Gly
		275					280					285			
Lys	Glu	Lys	Gln	Lys	Met	Thr	Val	Phe	Lys	Glu	Gly	Leu	Gln	Ser	Thr
	290					295					300				
Asn	Thr	Val	Asn	Leu	Ile	Gly	Gly	Glu	Arg	Lys	Ile	Thr	Val	Thr	Leu
305					310					315					320
Leu	Glu	Tyr	Thr	Pro	Lys	Lys	Cys	Thr	Leu	Lys	Glu	Asn	Ser	His	Lys

325 330 335
 Lys Lys Glu Glu Val Pro Phe Met Leu Tyr Gly Glu Asn Lys Ser Lys
 340 345 350
 Leu Pro Ile Ser Val Ser Gly Lys Thr Gly Lys Ile Glu Asn Ile Lys
 355 360 365
 Ile Lys Tyr Asn Tyr Gly Ile Ile Asn Ala Ile Lys Thr Leu Trp Leu
 370 375 380
 Pro Met Ser Gly Ile Val Gln Thr Ser Lys Leu Tyr Thr Ser Tyr Ala
 385 390 395 400
 Asn Cys Arg His Phe Asn Asp Val Ile Phe Asn Met Tyr Pro Asp Thr
 405 410 415
 Lys Trp Glu Ala Phe Val Glu Leu Ser Ser Lys Pro Arg Leu Tyr
 420 425 430
 Ser His Thr Asn Met Pro Ala Glu Tyr Ser Ile Phe Glu Arg His Gln
 435 440 445
 Lys Lys Ala Leu Ser Ala Ala Lys Glu Asp Lys Asp Ile Gly Leu Ser
 450 455 460
 Phe Ser Leu Met Ala Thr Tyr Asp Asp Asp Ile Glu Ile Lys Leu Thr
 465 470 475 480
 Ala Asp Ile Glu Lys Ser Val Lys Thr Val Ser His Val Leu Lys Thr
 485 490 495
 Ile Arg Asp Ala Leu Asp Val Leu Ser Phe Lys Lys Ser Val Asp Asp
 500 505 510
 Asn Lys Asp Lys Leu Lys Ala Arg Asn Val Leu Pro Lys Ser Ser Lys
 515 520 525
 Leu Pro Val Phe Ile Glu Ile Ser Ser Pro Val Leu Lys Ile Gly Gly
 530 535 540
 Gly Trp Gln Tyr Asp Leu Asn Ser Glu Asn Gln Leu Ile Arg Lys Gly
 545 550 555 560
 Glu Ile Ala Ile Ala Ala Ser Pro Leu Ile Glu Ala Lys Gly Gly Ile
 565 570 575
 Asp Leu Ile Ala Cys Ser Thr Phe Ile Pro Val Val Gly Gln Ile Ile
 580 585 590
 Lys Ala Ile Leu Lys Leu Asn Asp Phe Ala Glu Trp Ala Thr Lys Tyr
 595 600 605
 Leu Ser Asn Asp Lys Ala Lys Tyr Glu Gly Leu Ile Trp Phe Asn Ile
 610 615 620
 Tyr Leu Lys Gly Ser Leu Ser Ile Val Gly Thr Val Lys Leu Ser Glu
 625 630 635 640
 Glu Asn Arg Thr Val Lys Phe Glu Ser Pro Val Asn Ile Val Phe Val
 645 650 655
 Val Glu Leu Gly Ile Ser Ala Glu Val Lys Val Glu Thr Val Thr Ile
 660 665 670
 Thr Gly Asn Asn Thr Tyr Thr Val Arg Ala Gly Ala Ser Gly Glu Ala
 675 680 685
 Ser Thr Gly Leu Thr Phe Lys Pro Ser Met Gly Tyr Ser Thr Asp Glu
 690 695 700
 Gly Ile Tyr Leu Gly Phe Lys Val Ser Phe Asp Gly Ile Ile Leu Thr
 705 710 715 720
 Val Ser Gly Glu Ala Lys Phe Glu Gln Lys Lys Lys Gly Lys Lys Thr
 725 730 735
 Leu Ser Ile Gly Pro Glu Ile Asn Gly Glu Pro Leu Pro Pro Leu Ile
 740 745 750
 Ala Pro Cys Ser Ile Trp Lys Gly Glu Val Tyr Pro Phe Arg Glu Thr
 755 760 765
 Asn Lys Lys
 770

<211> 321
 <212> PRT
 <213> B.fragilis

<400> 7686

Trp Ile Asp Met Glu His Arg Leu Pro Lys Glu Ile Lys Gly Leu Leu
 1 5 10 15
 Pro Pro Asn Thr Met Asp Thr Asp Phe Lys Ala Glu Leu Tyr Gly Ala
 20 25 30
 Leu Leu Ala Glu Ala Gly Phe Asp Thr Ala Gln Ile Met Met Val Arg
 35 40 45
 Asp Gly Asn Asn Leu Ser Asn Val Ser Lys Asp Ile Arg Ser Val Lys
 50 55 60
 Tyr Arg Asn His Val Gly Ile Ala Glu Gly Thr Tyr Ile Glu Leu Lys
 65 70 75 80
 Thr Asn Arg Arg Gly Ile Tyr Asp Ser Leu Pro Glu Gly Leu Phe His
 85 90 95
 Glu Ala Leu Phe Pro Gly Lys Val Lys Asp Leu Gly Leu Ile Leu Glu
 100 105 110
 Glu Met Gln Gln His Ser Asn Glu Glu Phe Phe Ile Arg Arg Phe Phe
 115 120 125
 Ser Leu Leu Glu Ser Glu Val Asp Arg Glu Gly Ile Gln Ala Gln Leu
 130 135 140
 Leu Glu Leu Arg Tyr Asp Lys Lys Asn Lys Tyr Ser Asp Tyr Ala Lys
 145 150 155 160
 Leu Phe Ala Ala Cys Trp Pro Val Ile His Ile Leu Ser Gly Gln Gly
 165 170 175
 Ala Leu Leu Phe Ile Lys Phe Met Pro His Ile His Ser Ile Arg Gly
 180 185 190
 Arg Leu Glu Glu Val Ser Asp Ala Leu Ser Gln Ile Leu Glu Ala Pro
 195 200 205
 Val Lys Val Arg Pro Lys Met Val Gln Arg Thr Ile Arg Ala Gln Asn
 210 215 220
 Pro Asn Arg Leu Gly Asn Met Arg Leu Gly Ala Asn Ser Val Asn Val
 225 230 235 240
 Gly Val Leu Asn Ser Ala Gly Ala Asp Leu His Ile His Ile Ser Asp
 245 250 255
 Leu Pro Thr Arg Glu Val Glu Arg Phe Leu Pro Gly Asn Arg Ser Arg
 260 265 270
 Lys Ala Leu Glu Met Leu Ala Asp Ile Phe Leu Gly Ala Trp Gln Glu
 275 280 285
 Phe Asp Val Thr Val Ser Val Ser Pro Asp Glu Arg Lys Thr Tyr Leu
 290 295 300
 Lys Pro Thr Gly Asp Ala Ser Pro Cys Tyr Leu Gly Ile Asn Thr Tyr
 305 310 315 320
 Leu

<210> 7687
 <211> 307
 <212> PRT
 <213> B.fragilis

<400> 7687

Gln Pro Asp Ile Met Asn Gly Leu Gln Ile Ile Lys Thr Leu Ala Leu
 1 5 10 15
 Lys Ile Arg Tyr Ala Ser Ile Val Glu Trp Tyr Asn Phe Trp Ser Ile
 20 25 30
 Val Leu Gln His His Gln Asn Ile Val Pro Thr Val Ala Ser Ile Asp

35 40 45
 Glu Thr Ile Arg His Ile Thr Glu Gly Asn Arg Ser Ile Ser Arg Phe
 50 55 60
 Gly Asp Gly Glu Met Leu Leu Thr Ser Pro Ser Lys Ser Ile Gly Phe
 65 70 75 80
 Gln Glu Gly Ser Pro Leu Leu Ala Lys Arg Leu Arg Glu Val Leu Val
 85 90 95
 Ser His Glu Glu Gly His Leu Val Ala Ile Pro Asp Val Phe Ser Gly
 100 105 110
 Leu Asn Arg Tyr Arg Arg Lys Cys Arg Arg Phe Gln Arg Thr His Phe
 115 120 125
 Phe Ile Tyr Gly Lys Trp Trp Asp Gln Leu Leu Ile Pro Gly Arg Lys
 130 135 140
 Tyr Glu Asn Ala Phe Leu Ser Arg Pro Tyr Met Asp Tyr Thr Ser Lys
 145 150 155 160
 Glu His Cys Ala Arg Trp Phe Arg Glu Leu Lys Thr Ile Trp Glu Gly
 165 170 175
 Arg Asp Ile Val Phe Ile Glu Gly Ala Met Ser Arg Leu Gly Val Gly
 180 185 190
 Asn Asp Leu Phe Asp Asn Ala Gly Ser Ile Arg Arg Ile Leu Cys Pro
 195 200 205
 Pro Arg Asn Ala Phe Glu Arg Tyr Asp Arg Ile Leu Asn Glu Ala Leu
 210 215 220
 Lys Val Glu Lys Glu Val Leu Phe Leu Ile Ala Leu Gly Pro Thr Ala
 225 230 235 240
 Thr Val Leu Ala Tyr Asp Leu His Asn Ala Gly Tyr Gln Ala Val Asp
 245 250 255
 Ile Gly His Ile Asp Val Glu Tyr Glu Trp Trp Arg Met Lys Ala Arg
 260 265 270
 Arg Lys Val Lys Leu Glu Lys Lys Tyr Val Asn Glu Ala Phe Gly Asn
 275 280 285
 Lys Arg Val Thr Asp Ala Gly Glu Gly Tyr Arg Lys Glu Ile Ile Ala
 290 295 300
 Gln Ile Ser
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<210> 7688

<211> 158

<212> PRT

<213> B.fragilis

<400> 7688

Tyr Met Asp Ile Ala Lys Ile Ile Tyr Val Ser Leu Thr Met Leu Thr
 1 5 10 15
 Ala Trp Val Phe Met Ser Ile Ala Phe Pro Ile Asp Thr Tyr Lys His
 20 25 30
 Leu Leu Gly Val Val Gly Ser Tyr Ile Cys Val Ser Cys Ser Ala Leu
 35 40 45
 Phe Ala Ser Trp Phe Ala Trp His Trp Val His Pro Phe Ser Tyr Val
 50 55 60
 Lys Tyr Leu Leu Cys Gly Leu Leu Thr Ala Phe Leu Phe His Ala Gly
 65 70 75 80
 Leu Thr Ile Gly Cys Ser Ile Pro Ile Ile Phe Leu Ser Cys Cys Gly
 85 90 95
 Val His Val Ile Ser Thr Glu Ala Ile Thr Leu Trp Glu Val Leu Ser
 100 105 110
 Tyr Leu Phe Ser Ile Phe Ile Met Ser Phe Tyr Phe Val Gly Ile Phe
 115 120 125
 Thr Phe Gly Gln Cys Leu Leu Thr Ala Ser Ile Thr Lys Ile Ile Ile

130 135 140
 Trp Lys Leu Asn Ile Ser Asn Asn Ile Thr Asn Asn Ala Arg
 145 150 155

<210> 7689
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 7689
 Ile Thr Ser Ile Ser Ile Thr Ile Ser Ile Pro Lys Lys Leu Ser Ser
 1 5 10 15
 Ile Thr Pro Tyr Ile Pro Asn Ser Arg Pro Lys Pro Lys Pro Pro Lys
 20 25 30
 Lys Asn Val Ile Thr Ile Ser Lys Arg Leu Thr Ala Val Asn Asp Ser
 35 40 45
 Ile Asp Trp Thr Val Leu Phe Ile Ala Gln Leu Leu Val Met Val Gln
 50 55 60
 Gln Gly Thr Ala Cys Arg Tyr Leu Ala Leu Leu Val Ile Leu Leu Leu
 65 70 75 80
 Ile Phe Asn Phe His Ile Ile Ile Phe Val Met Leu Ala Val Ser Lys
 85 90 95
 His Cys Pro Lys Val Lys Ile Pro Thr Lys
 100 105

<210> 7690
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7690
 Asp Asn Thr Met Pro Tyr Ile Thr Ile Glu Gly Gly Ser Leu Thr Arg
 1 5 10 15
 Glu Gln Lys Ser Glu Leu Ile Arg Lys Val Thr Glu Val Ala Ser Glu
 20 25 30
 Val Met Gln Ile Pro Met Glu Phe Phe Leu Cys Thr Val Lys Glu Leu
 35 40 45
 Pro Asp Glu Asn Ile Gly Ile Gly Gly Arg Thr Ile Asp Leu Ile Lys
 50 55 60

<210> 7691
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 7691
 Gln Met Lys Ile Met Glu Ile Lys Tyr Ile Phe Cys Ile Val Phe Cys
 1 5 10 15
 Phe Trp Ala Met Lys Thr Thr Met Ala Gln Ser Asp Asn Asn Leu Phe
 20 25 30
 Ala Leu Glu Lys Gln Leu Cys Phe Ile Gln Asp Thr Leu Ser Ile Leu
 35 40 45
 Arg Gln Asn Tyr Pro Tyr Thr Asp Asp Asn Tyr Cys Asp Ser Leu Gln
 50 55 60
 His Arg Phe Ser Ile Leu Leu Glu Glu Leu Cys Ala Val Asp Lys Glu
 65 70 75 80
 Met Lys Tyr Asp Phe Ile Glu Leu Arg Lys Lys Glu Arg Gln Phe Thr
 85 90 95
 Met Ala Val Ser Val Asp Glu Asp Met Arg Val Phe Ser Arg Asn Thr

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100	105	110
Tyr Phe Gly Gly Ser Met Pro Leu Phe Ala Ser Tyr Ile Gln Tyr Lys		
115	120	125
Asp Lys Glu His Leu Tyr Phe Phe Asp Ile Asn Glu Asp Asn Asp Met		
130	135	140
Gly Ile Cys Tyr Asp Thr Ile Tyr Ser Ile Gln Ala Leu Asn Lys Arg		
145	150	155
Tyr Tyr Leu Leu Ser Gly Thr Ser Gln Ile Ala Ala Ala Tyr Pro Leu		
165	170	175
Val Val Met Lys Ala Val Ser Cys Ala Asn Gly Glu Leu Lys Lys Glu		
180	185	190
Ile Ile Phe Val Ser Gly Asn Gln Thr Asp Tyr Leu Ser Ile Ser		
195	200	205
Tyr Arg Tyr Val Lys Asp Asn Ile Asp Thr Arg Leu Phe Ile Ser Gly		
210	215	220
Asn Leu Thr Phe Pro Arg Ile Val Tyr Val Glu Thr Gln Glu Glu Ile		
225	230	235
Leu Lys Pro Val Thr Val Arg Asp Lys Asp Asp Ile Lys Tyr Ile Gly		
245	250	255
Gly Glu Ile Asp Val Tyr Lys Leu Glu Arg Asn Lys Asn Glu Ile Lys		
260	265	270
Phe Ile Asn Asn Asn Glu Ser Tyr His Leu Asn Asp Asp Pro Phe		
275	280	285

<210> 7692
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 7692
 Ala Glu Arg Ile Glu Tyr Gly Tyr Gln Gln Asp Ala Asp His Gln Gly
 1 5 10 15
 Arg Asp Gln Leu Asp Gly Glu Met Ala Gln Ala Ala Val Gln Arg His
 20 25 30
 Pro Val His His Pro Val Ala Leu Ser Glu Val Asp Gly Lys Arg Glu
 35 40 45
 Arg Asp Ala Cys Gly Tyr Ser Phe Glu Arg Ala Glu Pro Lys Asn Ala
 50 55 60
 Gln
 65

<210> 7693
 <211> 112
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (104), (105), (107), (110), (111)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7693
 Arg Gln Ser Val Leu Pro Arg Asn Lys His Leu Phe Ile Arg Ile Met
 1 5 10 15
 Lys Ala Lys Asn Ser Glu Lys Ile Ile Arg Gly Tyr Leu Glu Phe Ala
 20 25 30
 Gly Gly Leu Leu Ile Ser Thr Ala Leu Ser Met Ala Leu Leu Thr Gly
 35 40 45
 Phe Ile His Thr Asn Gly Ser Glu Tyr Lys Leu Met Glu Ser Lys Thr

50 55 60
 Gln Glu Tyr Asp Lys Ile Tyr Ala Arg Gln Ile Ala Leu Val Asp Lys
 65 70 75 80
 Val Asp Ser Leu Tyr Asn Tyr Leu Val Leu Met Val Phe Thr Thr Gly
 85 90 95
 Leu Glu Arg Ala Ala Ala Ile Xaa Xaa Ser Xaa Ser Ile Xaa Xaa Pro
 100 105 110

<210> 7694
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7694
 Phe Val Arg Phe Arg Ile Val Gly Arg Thr Ile Glu Phe Gly Arg Asn
 1 5 10 15
 Ser Val His Gln Gln Ile Gly Tyr Ala Lys Cys Gln Arg Asn Glu Gln
 20 25 30
 Asp Pro Val Asp Gln Ala Gln Met Ser Ile Ile Ser Leu Asn Val Gly
 35 40 45
 Tyr Gly Ser Ile Tyr Leu Cys Lys Ser Val Gln Leu Trp Phe Thr Thr
 50 55 60
 Asp Tyr Thr Glu Asp His Phe Gly Arg Val Leu Gln Asn Pro Ile Glu
 65 70 75 80
 Ser Gln Arg Ile Pro Gln Asp Phe Thr Phe Ser Phe Met Asp Ile Pro
 85 90 95
 Gln Glu Asn Asp Ser Ser Leu Cys
 100

<210> 7695
 <211> 1248
 <212> PRT
 <213> B.fragilis

<400> 7695
 Lys Asn Gln Val Gln Asn Pro Lys Val Met Thr Ser Leu Lys His Gln
 1 5 10 15
 Leu Phe Ser Gly Val Phe Tyr Thr Ala Leu Ala Lys Tyr Ser Gly Ile
 20 25 30
 Gly Val Ser Leu Val Val Ala Gly Val Leu Ala Arg Leu Ile Ser Pro
 35 40 45
 Asp Asp Phe Gly Val Met Ala Val Ala Thr Val Ile Ile Ala Phe Phe
 50 55 60
 Asn Leu Phe Thr Asp Val Gly Leu Ser Pro Ala Ile Ile Gln His Lys
 65 70 75 80
 Thr Leu Thr Gly Glu Asn Leu Ser Gly Leu Phe Ser Phe Thr Val Trp
 85 90 95
 Thr Gly Ile Gly Leu Ala Leu Leu Phe Ala Ala Ala Ser Trp Pro Ile
 100 105 110
 Ala Ala Tyr Tyr Asp Arg Glu Ile Leu Arg Pro Leu Cys Gln Leu Leu
 115 120 125
 Ala Val Asn Leu Phe Phe Ala Ser Ala Thr Ile Val Pro Asn Ala Leu
 130 135 140
 Phe Tyr Arg Asn Lys Glu Phe Lys Phe Ile Ala Leu Arg Ser Phe Val
 145 150 155 160
 Ile Gln Ile Ala Thr Gly Thr Ala Ala Val Val Ala Ala Leu Cys Gly
 165 170 175
 Ala Gly Leu Tyr Ala Leu Ile Ile Gly Pro Ile Leu Ser Gly Ile Leu
 180 185 190

Ile	Phe	Ala	Val	Ser	Ile	Arg	His	Tyr	Pro	Gln	Arg	Leu	Lys	Phe	Thr
	195						200					205			
Leu	Gly	Leu	Asp	Val	Leu	Arg	Arg	Ile	Phe	Ser	Tyr	Ser	Ala	Tyr	Gln
	210					215					220				
Phe	Leu	Phe	Asn	Ile	Ile	Asn	Tyr	Phe	Ser	Arg	Asn	Leu	Asp	Lys	Leu
225				230						235					240
Leu	Ile	Gly	Lys	Tyr	Met	Gly	Met	Ser	Pro	Leu	Gly	Tyr	Tyr	Glu	Lys
				245					250					255	
Ser	Tyr	Arg	Leu	Met	Met	Leu	Pro	Leu	Gln	Asn	Ile	Thr	Gln	Val	Ile
			260					265					270		
Thr	Pro	Val	Met	His	Pro	Ile	Phe	Ser	Asp	Tyr	Gln	Asp	Asp	Leu	Glu
		275					280					285			
Arg	Leu	Ala	Ser	Gly	Tyr	Glu	Arg	Ile	Val	Arg	Phe	Leu	Ala	Phe	Ile
	290					295					300				
Gly	Leu	Pro	Leu	Ser	Val	Leu	Leu	Tyr	Phe	Thr	Ala	Gly	Glu	Val	Thr
305				310						315					320
Leu	Ile	Ile	Phe	Gly	Asp	Gln	Trp	Thr	Pro	Ser	Ile	Pro	Val	Phe	Arg
				325					330					335	
Ile	Leu	Thr	Leu	Ser	Val	Gly	Val	Gln	Ile	Ile	Leu	Ser	Ser	Ser	Gly
			340					345					350		
Ser	Ile	Phe	Gln	Ala	Ala	Gly	Asp	Thr	Lys	Asn	Leu	Phe	Met	Cys	Gly
		355					360					365			
Leu	Phe	Ser	Ser	Ile	Leu	Asn	Val	Thr	Gly	Ile	Leu	Leu	Gly	Ile	Phe
	370					375					380				
Trp	Phe	Gly	Thr	Leu	Glu	Ala	Val	Ala	Thr	Cys	Ile	Thr	Leu	Thr	Phe
385				390						395					400
Thr	Val	Asn	Phe	Ala	Gln	Cys	Tyr	Trp	Met	Met	Tyr	Arg	Met	Thr	Leu
				405					410					415	
His	Arg	Ser	Leu	Arg	His	Phe	Ala	Ile	Gln	Leu	Ile	Ser	Pro	Leu	Met
			420					425					430		
Val	Ser	Ile	Leu	Leu	Ile	Ala	Val	Leu	Tyr	Pro	Leu	Ser	Leu	Met	Thr
		435					440					445			
Glu	Gly	Gly	Asn	Ile	Phe	Leu	Thr	Leu	Ile	Val	Lys	Ser	Ile	Ile	Phe
	450					455					460				
Phe	Cys	Ile	Phe	Gly	Cys	Tyr	Ile	Gln	Leu	Thr	Gly	Glu	Tyr	Asp	Ile
465				470						475					480
Thr	Gly	Lys	Gly	Lys	Lys	His	His	Lys	Gln	Lys	Gln	Thr	Met	Lys	Ala
				485					490					495	
Leu	Phe	Leu	Ile	Phe	His	Gly	Phe	Glu	Glu	Ala	Asn	Gly	Ile	Ser	Lys
			500					505					510		
Lys	Ile	Arg	Tyr	Gln	Val	Lys	Ala	Leu	Lys	Glu	Cys	Gly	Met	Asp	Val
		515					520					525			
His	Thr	Cys	Tyr	Leu	Asn	Glu	Glu	Asn	Gly	His	Lys	Cys	Arg	Met	Ile
	530					535					540				
Asp	Asn	His	Thr	Leu											

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Ser Asn Ile Val Asp Lys Tyr Cys Glu Ser Ser Ile Phe Ala Leu Ser
 1140 1145 1150
 Ser Arg Tyr Glu Gly Phe Gly Met Val Leu Val Glu Ala Met Val Cys
 1155 1160 1165
 Gly Val Pro Pro Val Ser Phe Ala Cys Pro Cys Gly Pro Arg Asp Ile
 1170 1175 1180
 Ile Asp Asp Gly Asn Asp Gly Leu Leu Val Pro Lys Glu Asn Ile Asn
 1185 1190 1195 1200
 Lys Leu Ala Glu Lys Ile Gly Tyr Leu Ile Ser His Glu Asn Ile Arg
 1205 1210 1215
 Lys Glu Met Gly Gln Arg Ala Arg Ile His Val Glu Arg Phe Lys Ile
 1220 1225 1230
 Asp His Ile Ala Ser Gln Trp Lys Glu Leu Phe Asn Ser Leu Ile Ser
 1235 1240 1245

<210> 7696

<211> 70

<212> PRT

<213> B.fragilis

<400> 7696

Tyr Glu Glu Val Asn Asn Ala Ile Glu Lys Ile Gly Gln Glu Met Tyr
 1 5 10 15
 Arg Glu Thr Glu Phe Leu Glu Lys Ala Met Ala Ile Tyr Leu Leu Asp
 20 25 30
 Asn Thr Ser Phe Gly Glu His Gly Phe Asp Leu Ala Asn Pro Lys Leu
 35 40 45
 Ile Glu Glu Ala Ile Asn Asp Gly Arg Ile Lys Pro Phe Pro Arg Ala
 50 55 60
 Thr Arg Lys Thr Lys Asp
 65 70

<210> 7697

<211> 488

<212> PRT

<213> B.fragilis

<400> 7697

Val Asn Gly Val Ile Leu Met Thr Cys Lys Tyr Asp Arg Ile Met Asn
 1 5 10 15
 Ile Lys Thr Leu Leu Ile Met Gly Leu Val Asn Met Phe Gly Leu Gly
 20 25 30
 Gly Cys Ala Asn Ala Glu Ile Gly Lys Gln Val Leu Asn Leu Asp Asp
 35 40 45
 Leu Asp Tyr Gly Ile Asp Val Val Arg Tyr Tyr Ala Pro Ala Met Glu
 50 55 60
 Glu Ser Lys Asp Thr Val Glu Glu His Tyr Tyr Val Asn Arg Asp Thr
 65 70 75 80
 Val Lys Phe Tyr Asp Thr Glu Thr Asp Lys Leu Leu Pro Val Leu Ile
 85 90 95
 Ala Tyr Arg His Leu Ala Gly Val Val Lys Glu Gln Ala Thr Phe Cys
 100 105 110
 Gly His Ser Phe Thr Asn Val Ser Met Ala Thr Met Glu Asp Gly His
 115 120 125
 Leu Ile Met Val Gln Cys Glu Val Glu Met Gln Pro Ala Asp Leu Ser
 130 135 140
 Gln Leu Leu Ala Ala Val Lys Lys Tyr Gly Glu Pro Tyr Thr Glu
 145 150 155 160
 Glu Lys Asp Gln Phe Gly Lys Pro Asp Pro Lys Trp Arg Trp Glu Thr

4021 7696 7697 488 PRT B.fragilis B.fragilis

165 170 175
 Lys Asp Glu Tyr Ile Gln Leu Asn Ala Lys Asn Met Ser Gly Lys Glu
 180 185 190
 Thr Leu Asn Ile Glu Thr Thr Asp Asn Val Glu Glu Pro Val Lys Ile
 195 200 205
 Gly Asn Pro Lys Pro Tyr Val Lys Val Ala Leu Tyr Arg Trp Ala Lys
 210 215 220
 Lys Tyr His Asp Leu Val Leu Ala Glu Glu Pro Leu Tyr Gly Phe Ser
 225 230 235 240
 Pro Leu Asn Lys Glu Ala Glu Thr Arg Trp Asp Asn Asp His Ile Lys
 245 250 255
 Ser Ala Lys Phe Tyr Thr Pro Glu Glu Val Lys Pro Phe Phe Ile Thr
 260 265 270
 Ala His Tyr Leu Asp Ser Leu Glu His Ser Gly Asp Val Trp Gly Lys
 275 280 285
 Ile Glu Ala Ser Phe Tyr Tyr Arg Ile Pro Asn Ser Lys Val Thr Asp
 290 295 300
 Glu Thr Gly Ile Thr Asp Ser Val Lys Ile Asn Gln Glu Gly Cys Leu
 305 310 315 320
 Pro Cys Trp Ser Phe Gly Gly Leu Asp Arg Asp Phe Lys Asn Gly Leu
 325 330 335
 Ser Asn Ala Ala Tyr Ile Ala Arg Gln Met Gln Lys Gly Val Lys Phe
 340 345 350
 Thr Glu Ile Met Glu Asp Lys Glu Leu Cys Pro Asp Val Tyr Tyr Tyr
 355 360 365
 Gly Glu Ala Glu Trp Trp Lys Lys Lys Val Phe Gly Ile Val Arg
 370 375 380
 Phe Glu Arg Asp Glu Lys Asp Asn Met Val Leu Arg Glu Pro Glu Thr
 385 390 395 400
 Asp Arg Asp Asp Ile Arg Arg Arg Val Leu Ile Ile Asn Asp Asn Ile
 405 410 415
 Lys Glu Glu Leu Arg Lys Ser Gly Leu Asp Leu Glu His Thr Thr Ala
 420 425 430
 Arg Leu Met Asn Ala Pro Gly Asp Ile Thr Pro Leu Ala Phe Phe Thr
 435 440 445
 Asp Gly Lys Leu Asp Met Phe Met Cys Ile Asp Glu Gly Arg Tyr Ser
 450 455 460
 Phe Ser Thr Pro Asn His Glu Trp Glu Ser Asn Lys Ile Tyr Arg Leu
 465 470 475 480
 Tyr Asp Tyr Leu Ser Asp Ile Lys
 485

<210> 7698

<211> 119

<212> PRT

<213> B.fragilis

<400> 7698

Leu Lys Ser Phe Pro Glu Phe Ser Phe Tyr Ser Ala Ala Val Val Pro
 1 5 10 15
 Gln Arg Val Ile Val Tyr His Pro Ala Phe Val Ser Ile Phe Leu Val
 20 25 30
 Gln Ile Thr Cys Val His Val His Ser Ala Leu Phe Gln Arg Phe Tyr
 35 40 45
 Leu Ile Ala Asp Phe Leu Ala Asp Ala Val Arg Phe Phe Lys Ser Val
 50 55 60
 Glu Tyr Lys Lys Gln Cys Phe His Arg Leu Phe Leu Phe Met Met Leu
 65 70 75 80
 Phe Ala Leu Ala Ser Asp Val Val Phe Thr Gly Gln Leu Tyr Ile Ala

85 90 95
 Pro Lys Tyr Thr Glu Lys Tyr Asn Ala Phe Tyr Asn Gln Gly Gln Lys
 100 105 110
 Asn Val Ala Ser Phe Cys His
 115

<210> 7699
 <211> 130
 <212> PRT
 <213> B.fragilis

<400> 7699
 Asn Met Ala Phe Arg Ala Thr Leu Ser Phe Ala Gly Lys Glu Phe Asp
 1 5 10 15
 Val Leu Asp Cys Thr Tyr Ser Leu Lys Arg Asp Val Asp Ser Lys Gly
 20 25 30
 Arg Pro Ser Ser Asn Ile Tyr Gly Gly Gln Ile Arg Leu His Val Glu
 35 40 45
 Ser Thr Asp Asp Thr Ser Ile Leu Glu Asn Met Thr Asn Gln Phe Lys
 50 55 60
 Pro His Ser Gly Ser Ile Val Phe Lys Lys Gly Asp Glu Glu Ala Lys
 65 70 75 80
 Met Lys Glu Leu Thr Trp Glu Asn Gly Tyr Ile Thr Glu Phe Thr Glu
 85 90 95
 Asn Ile Asp Ile Val Gly Ser Gln Pro Met Thr Ile Thr Phe Val Val
 100 105 110
 Ser Ala Gln Val Ile Lys Ile Gly Gly Ala Gln Phe Glu Gln Asn Trp
 115 120 125
 Pro Lys
 130

<210> 7700
 <211> 611
 <212> PRT
 <213> B.fragilis

<400> 7700
 Asn Ile Lys Leu Lys Arg Met Ala Asn Leu Phe Thr Lys Glu Ser Ile
 1 5 10 15
 Lys Ala Arg Met Phe Lys Gln Ala Ala Thr Leu Tyr Asp Ile Arg Asn
 20 25 30
 Ile Asp Gly Ile Asp Pro Leu Ile Arg Leu Leu Ile Glu Ala Leu Ser
 35 40 45
 Gly Glu Ile Phe Lys Leu Ser Gly Asp Met His Ala Ile Glu Ser Arg
 50 55 60
 Leu Leu Glu Lys Val Ala Ser Ala Leu Thr Pro His Thr Ala Leu Val
 65 70 75 80
 Ala Lys Pro Ala His Ala Ile Ala Ala Arg Pro Tyr Thr Pro Gln
 85 90 95
 Ala Thr Val Ser Pro Thr Asp Leu Phe Ser Tyr Lys Ser Thr Glu Ile
 100 105 110
 Val Lys Lys Tyr Lys Met Lys Asn Leu Phe Phe Thr Pro Leu His Glu
 115 120 125
 Thr Arg Ile Ile Asn Ala Glu Leu Lys Phe Leu Val Thr Ala Asp Glu
 130 135 140
 Phe Cys Thr Ile Thr Pro Glu Gly Glu Arg Asp Ala Thr Ala Arg Phe
 145 150 155 160
 Arg Ser Asp Val Pro Val Met Gly Arg Lys Ile Ser Ile Gly Met Lys
 165 170 175

Ile Gly Asn Asn Val Thr Thr Leu Asn Asp Leu Pro Leu Tyr Ile Asp
 180 185 190
 Ile Pro Leu Val Ala Asp Lys Ser Ser Tyr Leu Lys Leu Leu Pro Tyr
 195 200 205
 Cys His Cys Thr Ile Ala Gly Ile Pro Val Glu Ile Lys Gly Gly Ile
 210 215 220
 Glu Tyr Ala Pro Thr Arg Ser Val Ser Glu Lys Tyr Asp Leu Gly Arg
 225 230 235 240
 Leu Ile Thr Glu Glu Ile Thr Ser Lys Tyr Ala Ser His Tyr Leu Thr
 245 250 255
 Leu Lys Ala His Gly Leu Lys Val Arg Asp Leu Ser Arg Ser Arg Val
 260 265 270
 Pro Glu Glu Ile Ser Phe Leu Leu Pro Ser Asp Phe Ile Ala Glu Cys
 275 280 285
 Asp Ala Asp Thr Val Trp Ile Asp Ile Glu Phe Pro Thr Ala Phe Ser
 290 295 300
 Lys Glu Ile Leu Glu Gln Ile Lys Val Gln Met Asn Thr Phe Ile Val
 305 310 315 320
 Val Asn Lys Tyr Pro Ala Lys Ile Thr Arg Lys Val Asp Ser Val Ser
 325 330 335
 Ala Ile Leu Pro Leu Glu Lys Thr Glu Phe Glu Tyr Phe Leu Phe Val
 340 345 350
 Asp Ser Ile Thr Asp Asn His Gly Asp Arg Leu Arg Glu Ile Ser Gly
 355 360 365
 Thr Gln Asp Glu Gly Arg Ala Gly Cys Tyr Ser Val Arg Arg Gly Gly
 370 375 380
 Cys Glu Arg Phe Asn Ala Met Asp Ala Lys Asp Phe Leu Asn Arg Leu
 385 390 395 400
 Thr Asp Leu Leu Tyr Asp Glu Ser Met Ala Phe Ser Ser Thr Asp Lys
 405 410 415
 Asp Gly Met Lys Glu Val Ile Glu Gln Ile Glu Glu Arg Val Ser Gln
 420 425 430
 Leu Gly Asp Lys Asn Lys Asp Gly Val Gly Gly Gln Glu Met Leu Ser
 435 440 445
 Tyr Val Val Ile Asp Gln Arg Tyr Asp Lys Asp Thr Arg Leu Thr Val
 450 455 460
 Asp Tyr Thr Leu Thr Asn Gly Glu Phe Ala Asn Asp Ile Tyr Ala Gly
 465 470 475 480
 Glu Pro Leu Asn Asp Cys Ala Asn Pro Asp Ile Asp Lys Asp Thr Leu
 485 490 495
 Arg Phe Val Thr Phe Ala His Gly Gly Glu Pro Ser Pro Ser Val Arg
 500 505 510
 Arg Arg Met Asp Met Tyr Pro Ile Met Leu Leu Ser His Gly Ser Ile
 515 520 525
 Tyr Thr Lys Glu Asp Ile Arg Asn Phe Cys Met Ala Arg Tyr Gly Asp
 530 535 540
 Ser Ile Arg Ser Val Glu Val Lys Leu Gly Tyr Ala Ala Gly Lys Lys
 545 550 555 560
 Glu Ser Glu Gly Phe Ile Arg Thr Leu Asp Val Tyr Leu Arg Leu Ser
 565 570 575
 Glu Gly Met Gln Gly Leu Asp Arg Asp Glu Phe Val Val Asp Leu Asp
 580 585 590
 Ser Glu Leu Arg Arg Leu Ser Pro Glu Thr Tyr Asn Tyr Arg Val Phe
 595 600 605
 Ile Asn Ser
 610

<210> 7701

<211> 183

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (107)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7701

Asn	Ala	Lys	Phe	Lys	Thr	Met	Gly	Lys	Lys	Ala	Val	Ser	Lys	Leu	Phe
1				5					10					15	
Tyr	Cys	Thr	Ser	Ile	Ala	Leu	Thr	Phe	Val	Leu	Ala	Gly	Ile	Thr	Ile
			20					25					30		
Ala	Gly	Ala	Phe	Ala	Gly	His	Ile	Pro	Pro	Glu	His	Ser	Thr	Leu	Met
		35				40						45			
Pro	Phe	Ile	Gly	Leu	Ala	Leu	Ser	Gly	Leu	Leu	Leu	Ile	Asn	Leu	Val
	50					55					60				
Ala	Ala	Ile	Tyr	Trp	Gly	Ile	Arg	Arg	Arg	Phe	Trp	Ile	Ile	Ile	Pro
65					70					75					80
Leu	Ile	Ala	Ile	Ala	Ala	Asn	Trp	Gln	Tyr	Leu	Gly	Arg	Ile	Phe	Gln
			85					90					95		
Leu	Leu	Leu	Arg	Ser	Glu	Glu	Lys	Glu	Ala	Xaa	Thr	Leu	Lys	Ile	Ala
			100					105					110		
Thr	Tyr	Lys	Val	Asp	Ser	Phe	Gly	Thr	Lys	Gln	Ser	Gly	Tyr	Ser	Cys
		115					120					125			
Lys	Glu	Ile	Ala	Ala	Tyr	Met	Lys	Glu	His	Arg	Val	Asp	Ile	Ile	Cys
	130					135					140				
Phe	Gln	Glu	Phe	Val	Gly	Gln	Pro	Val	Leu	Leu	Leu	Gln	Thr	Ala	Tyr
145					150					155					160
Gly	Thr	His	Leu	Gln	Thr	Gly	Ser	Met	Pro	Ser	Phe	Arg	Lys	Leu	Arg
			165					170						175	
Thr	Ala	His	Leu	Ser	Cys	Arg									
			180												

<210> 7702

<211> 331

<212> PRT

<213> B.fragilis

<400> 7702

Glu	Leu	Asn	Ser	Lys	Ile	Met	Asn	Ile	Arg	Asn	Leu	Phe	Phe	Leu	Gly
1				5					10					15	
Ser	Ile	Leu	Leu	Leu	Leu	Ser	Cys	Lys	Asn	Ser	Lys	Gln	Gln	Glu	Gly
		20					25					30			
Tyr	Asn	Ser	Ile	Asn	Ile	Ile	Lys	Tyr	Ile	Asn	Ile	Tyr	Asn	Glu	Asn
	35					40					45				
Asn	Arg	Ile	Leu	Thr	Ala	Gln	Gly	Thr	Glu	Tyr	Asp	Tyr	Leu	Tyr	Phe
	50					55					60				
Gly	Asp	Asn	Lys	Asp	Lys	Glu	Ile	Leu	Ala	Asn	Val	Asn	Asn	Phe	Thr
65					70					75					80
Lys	Thr	Tyr	Ser	Tyr	Asp	Asn	Asp	Ser	Ser	Cys	Tyr	Thr	Val	Glu	Glu
			85					90					95		
Pro	Leu	Ser	Glu	Ser	Leu	Leu	Lys	Thr	Met	Arg	Tyr	Thr	Glu	Asn	Thr
		100						105					110		
Ile	Glu	Glu	Leu	Val	Leu	Glu	Asn	Lys	Asp	Thr	Phe	Ser	Tyr	Thr	
	115						120				125				
Phe	Ser	Thr	Tyr	Tyr	Asp	Lys	Asn	Lys	Pro	Lys	Tyr	Asn	Lys	Ser	Ile
	130					135					140				
Ile	Ile	Leu	Gly	Asp	Glu	Pro	Ser	Ser	Asp	Ser	Arg	Tyr	Glu	Glu	Tyr

145		150		155		160									
Tyr	Tyr	Tyr	Asp	Asn	Asn	Gly	Asn	Asn	Thr	Lys	Lys	Ile	His	His	Asp
			165						170						175
Leu	Asn	Thr	Gly	Gln	Arg	Glu	Glu	Thr	Tyr	Lys	Phe	Asn	Asp	Thr	Asp
			180						185						190
Tyr	Lys	Glu	Ala	Val	Asn	Leu	Val	Pro	Ser	Ser	Asp	Tyr	Lys	Gln	Asn
		195					200					205			
Ile	Glu	Cys	Ser	Leu	Lys	Gln	Thr	Val	Asn	Asp	Thr	Leu	Ile	Thr	Arg
	210					215					220				
Ile	Thr	Leu	Asn	Gly	Val	Leu	Asn	Arg	Val	Met	Lys	Glu	Tyr	Ile	Asp
225					230					235					240
Gly	Lys	Lys	Lys	Ile	Lys	Glu	Glu	Leu	Asp	Asn	Asp	Met	Thr	Leu	Val
				245					250					255	
Asn	Lys	Lys	Thr	Glu	Tyr	Glu	Glu	Asn	Gly	Leu	Lys	Val	Asn	Val	Asn
			260					265					270		
His	Thr	Ile	Arg	Ser	Thr	Gly	Tyr	Ser	Thr	Asp	Ser	Ile	Tyr	Tyr	Lys
		275					280					285			
Gly	Asn	Lys	Lys	Val	Lys	His	Ile	Tyr	Asn	Ser	Asp	Tyr	Asn	Gly	Thr
	290					295					300				
Ile	Thr	Leu	Glu	Ile	Ser	Glu	Tyr	Asp	Glu	Gln	Gly	Asn	Ile	Val	Lys
305					310					315					320
Lys	Thr	Lys	Lys	Leu	Arg	Trp	Pro	Ser	Asp	Lys					
				325					330						

<210> 7703
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 7703

Pro	Ile	Phe	Leu	Thr	Ala	Ala	Ser	Arg	Arg	Ser	Leu	Asp	Arg	Val	Ser
1				5					10					15	
Val	Pro	Met	Trp	Gly	Thr	Phe	Leu	Ser	Glu	Pro	Leu	Ser	Ile	Glu	Gly
		20						25				30			
Leu	Val	Ser	Arg	Tyr	Leu	Thr	Asn	Asn	Leu	Met	Glu	Arg	Ile	Pro	Ile
		35					40					45			
Leu	Tyr	Arg	Asn	Pro	Leu	Ile	Met	Lys	Pro	Cys	Gly	Ile	Ile	Met	Leu
	50					55					60				
Ser	Gly	Ile	Asn	Leu	Ser	Phe	Glu	Arg	Leu	Ser	Pro	Ser	Lys	Gly	Gln
65					70					75					80
Val	Gly	Tyr	Val	Leu	Leu	Thr	Arg	Ala	Pro	Val	Ala	Ser	Lys	Glu	Ser
				85					90					95	
Lys	Leu	Ser	Ser												
			100												

<210> 7704
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 7704

Pro	Pro	Thr	Lys	Leu	Asp	Asp	Ile	Pro	Ser	Glu	Cys	Arg	Val	Val	Pro
1				5					10					15	
Phe	Gly	Asn	Leu	Arg	Ile	Lys	Gly	His	Leu	His	Leu	Pro	Glu	Ala	Tyr
		20						25					30		
Arg	Ser	Leu	Ser	Arg	Pro	Ser	Ser	Pro	Pro	Arg	Ala	Lys	Ala	Ser	Ala
		35					40					45			
Met	Arg	Pro	Tyr	Leu	Leu	Ser	Phe	Ile	Ala	Arg	Asp	His	Phe	Leu	
	50					55					60				

<210> 7705
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7705

Cys	Arg	Gly	Arg	Gln	Phe	Asn	Ser	Ala	Trp	Asp	Tyr	Gln	Gln	Ile	Asp
1				5					10					15	
Ile	Leu	Ser	Cys	Met	Ile	Gly	Gly	Leu	Ala	Gln	Leu	Ala	Arg	Ala	Ser
			20					25					30		
Ala	Leu	His	Ala	Glu	Gly	Gln	Arg	Phe	Glu	Ser	Val	Ile	Leu	His	Ser
		35					40					45			
Asp	Thr	Ala	Thr	Glu	Gln	Ala	Cys	Val	Leu	Ser	Asn	Asp	Leu		
	50					55					60				

<210> 7706
 <211> 667
 <212> PRT
 <213> B.fragilis

<400> 7706

Ser	Leu	Ile	Pro	Leu	Ile	Met	Lys	Met	Thr	Leu	Ser	Asn	Gln	Leu	Pro
1				5					10					15	
Glu	Tyr	Pro	Val	Phe	Ala	Glu	Gly	Ile	Arg	Arg	Ala	Pro	Asp	Arg	Gly
			20					25					30		
Tyr	Thr	Leu	Ser	Pro	Ala	Gln	Thr	Val	Thr	Ala	Leu	Lys	Asn	Ala	Leu
		35					40					45			
Arg	Tyr	Ile	Pro	Val	Glu	Leu	His	Arg	Lys	Leu	Ala	Pro	Glu	Phe	Leu
	50					55				60					
Glu	Glu	Leu	Arg	Thr	Arg	Gly	Arg	Ile	Tyr	Gly	Tyr	Arg	Phe	Arg	Pro
65					70				75						80
Ala	Gly	Asp	Leu	Lys	Ala	Lys	Pro	Val	Asp	Glu	Tyr	Gln	Gly	Asn	Cys
				85					90					95	
Ile	Glu	Gly	Lys	Ala	Phe	Gln	Val	Met	Ile	Asp	Asn	Asn	Leu	Cys	Phe
		100						105					110		
Asp	Ile	Ala	Leu	Tyr	Pro	Tyr	Glu	Leu	Val	Thr	Tyr	Gly	Glu	Thr	Gly
	115					120						125			
Gln	Val	Cys	Gln	Asn	Trp	Met	Gln	Tyr	Arg	Leu	Ile	Lys	Gln	Tyr	Leu
	130				135						140				
Glu	Leu	Leu	Thr	Arg	Glu	Gln	Thr	Leu	Val	Ile	Glu	Ser	Gly	His	Pro
145					150					155					160
Leu	Gly	Leu	Phe	His	Ser	Arg	Pro	Asp	Ala	Pro	Arg	Val	Ile	Ile	Thr
				165					170					175	
Asn	Ser	Met	Met	Val	Gly	Met	Phe	Asp	Asn	Gln	His	Asp	Trp	His	Glu
		180						185					190		
Ala	Ala	Gln	Met	Gly	Val	Ala	Asn	Tyr	Gly	Gln	Met	Thr	Ala	Gly	Gly
		195					200					205			
Trp	Met	Tyr	Ile	Gly	Pro	Gln	Gly	Ile	Val	His	Gly	Thr	Phe	Asn	Thr
	210				215						220				
Leu	Leu	Asn	Ala	Gly	Arg	Leu	Lys	Leu	Gly	Ile	Pro	Gln	Asp	Lys	Asn
225					230					235					240
Leu	Ser	Gly	His	Leu	Phe	Val	Ser	Ser	Gly	Leu	Gly	Gly	Met	Ser	Gly
				245					250					255	
Ala	Gln	Pro	Lys	Ala	Ala	Glu	Ile	Ala	Gly	Ala	Ala	Ser	Ile	Ile	Ala
			260					265					270		
Glu	Val	Asp	Arg	Ser	Arg	Ile	Glu	Thr	Arg	Tyr	Lys	Gln	Gly	Trp	Val
		275					280					285			
Glu	His	Val	Thr	Thr	Asp	Leu	His	Thr	Asp	Phe	Arg	Met	Ala	Leu	Ser

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

290 295 300
 Ala Ala Glu Arg His Glu Ser Cys Ser Val Ala Tyr His Gly Asn Val
 305 310 315 320
 Val Asp Leu Leu Glu Tyr Ala Val Gln Glu Asp Ile Pro Ile Glu Leu
 325 330 335
 Leu Ser Asp Gln Thr Ser Cys His Ala Val Tyr Glu Gly Gly Tyr Cys
 340 345 350
 Pro Ala Gly Val Thr Phe Lys Glu Arg Thr Arg Leu Leu His Glu Ser
 355 360 365
 Pro Glu Ala Phe Arg Arg Leu Val Asp Glu Ser Leu His Arg His Phe
 370 375 380
 Ala Val Ile Lys Lys Leu Val Ser Arg Gly Thr Tyr Phe Phe Asp Tyr
 385 390 395 400
 Gly Asn Ser Phe Met Lys Ala Val Tyr Asp Ala Gly Val Lys Glu Ile
 405 410 415
 Ser Arg Asn Gly Thr Asp Glu Lys Asp Gly Phe Ile Trp Pro Ser Tyr
 420 425 430
 Val Glu Asp Ile Met Gly Pro Glu Leu Phe Asp Tyr Gly Tyr Gly Pro
 435 440 445
 Phe Arg Trp Val Cys Leu Ser Gly Asn Pro Glu Asp Leu Ala Arg Thr
 450 455 460
 Asp Cys Ala Ala Met Glu Cys Ile Asp Val Lys Arg Arg Gly Gln Asp
 465 470 475 480
 Leu Asp Asn Tyr Asn Trp Ile Arg Asp Ala Gly Lys Asn Arg Leu Val
 485 490 495
 Val Gly Thr Gln Ala Arg Ile Leu Tyr Gln Asp Ala Val Gly Arg Leu
 500 505 510
 Lys Ile Ala Leu Arg Phe Asn Gln Met Val Arg Asp Gly Glu Val Gly
 515 520 525
 Pro Ile Met Leu Gly Arg Asp His His Asp Val Ser Gly Thr Asp Ser
 530 535 540
 Pro Phe Arg Glu Thr Ser Asn Ile Lys Asp Gly Ser Asn Val Met Ala
 545 550 555 560
 Asp Met Ala Val Gln Cys Phe Ala Gly Asn Cys Ala Arg Gly Met Ser
 565 570 575
 Leu Val Ala Leu His Asn Gly Gly Gly Val Gly Ile Gly Lys Ala Ile
 580 585 590
 Asn Gly Gly Phe Gly Met Val Cys Asp Gly Ser Leu Arg Val Asp Glu
 595 600 605
 Ile Leu Arg Ser Ser Met Leu Trp Asp Val Met Gly Gly Val Ala Arg
 610 615 620
 Arg Ser Trp Ala Arg Asn Glu His Ala Met Glu Thr Ser Glu Ala Phe
 625 630 635 640
 Asn Leu Ser His Gly Asp Ala Tyr His Ile Thr Leu Pro Tyr Leu Ala
 645 650 655
 Asp Glu Glu Leu Ile Lys Arg Ile Val Ala Glu
 660 665

<210> 7707

<211> 81

<212> PRT

<213> B.fragilis

<400> 7707

Val Glu Leu Phe Val Asn Gln Gln Val Asp Asn Gly Lys Ile Asp Ile
 1 5 10 15
 Ile Pro Glu Tyr Ala Leu Leu Asn Ala His Leu Lys Lys Phe Asp Arg
 20 25 30
 Thr Val Arg Val Pro Leu Pro Ile Val Leu Gln Gln Thr Val Tyr Phe

35 40 45
 Arg Ile Leu Leu Tyr Ile Phe Lys Lys Thr Leu Val Ser Pro Met Glu
 50 55 60
 Cys Leu Asn Ala Pro Leu Ile Thr His Lys Asn Asp Phe Lys Asn Ile
 65 70 75 80
 Leu

<210> 7708
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 7708
 Arg Ile Met Leu Ala Glu Leu Thr Val Lys Glu Phe Leu Asp Lys Val
 1 5 10 15
 Ala Gly Ser Asp Pro Val Pro Gly Gly Gly Ser Val Ala Ala Leu Asn
 20 25 30
 Gly Ala Val Ala Ser Ala Leu Thr Ala Met Val Ala Gly Leu Thr Ile
 35 40 45
 Gly Lys Lys Gly Tyr Glu Glu His Glu Glu Leu Met Lys His Ile Ser
 50 55 60
 Arg Leu Ser Ile Arg Gln Gln Glu Leu Phe Val Glu Tyr Ile Asp Arg
 65 70 75 80
 Asp Ser Glu Ala Tyr Asp His Val Phe Gly Cys Phe Lys Leu Pro Lys
 85 90 95
 Ser Thr Asp Glu Glu Lys Ala Ala Arg Ser Ala Ala Ile Gln Glu Ala
 100 105 110
 Thr Arg Phe Ala Ala Leu Val Pro Met Gln Val Ala Arg Asn Ala Cys
 115 120 125
 Glu Leu Met Glu Ile Ile Ala Asp Val Ala Arg Leu Gly Asn Gln Asn
 130 135 140
 Ala Ile Thr Asp Ala Cys Val Ala Met Met Ala Ala Arg Ser Ala Val
 145 150 155 160
 Leu Gly Ala Leu Leu Asn Val Arg Ile Asn Leu Gly Ser Leu Lys Asp
 165 170 175
 Lys Thr Phe Val Asp Glu Leu Lys Arg Glu Ala Asp His Leu Glu Gln
 180 185 190
 Leu Ala Cys Met Arg Glu Lys Glu Leu Leu Glu Val Val Asn Gln Glu
 195 200 205
 Leu Asn Gln
 210

<210> 7709
 <211> 327
 <212> PRT
 <213> B.fragilis

<400> 7709
 Ser Cys Gln Pro Arg Thr Glu Pro Met Asn Asn Val Tyr Tyr Val Gly
 1 5 10 15
 Ser Gly Glu Leu Thr Phe Ser Ile Ile Glu Arg Ile Ile Asn Glu Asn
 20 25 30
 Leu Lys Leu Glu Leu Ala Pro Glu Ala Glu Gln Arg Ile Arg Lys Cys
 35 40 45
 Arg Asp Tyr Leu Asp Arg Lys Ile Ala Ala Ser Thr Glu Pro Leu Tyr
 50 55 60
 Gly Ile Thr Thr Gly Phe Gly Ser Leu Cys Ser Lys Asn Ile Ser Ser
 65 70 75 80

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<210> 7710
<211> 309
<212> PRT
<213> B.fragilis
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Ser	Val	Val	Pro	Leu	Lys	Arg	Cys	Ser	Met	Asn	Trp	Asn	Lys	Ile	Val
1				5					10					15	
Glu	Cys	Val	Pro	Asn	Phe	Ser	Glu	Gly	Arg	Asp	Leu	Glu	Lys	Met	Asp
			20					25					30		
Arg	Ile	Val	Ala	Pro	Phe	Arg	Ala	Arg	Ser	Gly	Val	Lys	Leu	Leu	Asp
		35					40					45			
Tyr	Ser	Asn	Asp	Glu	Asp	His	Asn	Arg	Leu	Val	Val	Thr	Leu	Ile	Gly
	50					55					60				
Glu	Pro	Glu	Ala	Leu	Arg	Asp	Ala	Val	Ile	Glu	Ala	Ile	Gly	Val	Ala
65					70					75					80
Val	Glu	Leu	Ile	Asp	Leu	Asn	His	His	Arg	Gly	Gln	His	Pro	Arg	Met
			85						90					95	
Gly	Ala	Val	Asp	Val	Val	Pro	Phe	Ile	Pro	Ile	Lys	Asn	Val	Thr	Met
			100					105					110		
Asp	Glu	Ala	Val	Ser	Leu	Ser	Arg	Glu	Ile	Gly	Glu	Lys	Val	Ala	Gly
		115					120					125			
Leu	Tyr	His	Leu	Pro	Val	Phe	Leu	Tyr	Glu	Lys	Ser	Ala	Thr	Ala	Pro
	130					135					140				
His	Arg	Glu	Asn	Leu	Ala	Val	Arg	Lys	Gly	Glu	Phe	Glu	Gly	Met	
145					150				155					160	

Ala Glu Lys Met Lys Leu Pro Glu Trp His Pro Asp Tyr Gly Pro Ala
 165 170 175
 Gly Cys His Pro Thr Ala Gly Val Val Ala Ile Gly Ala Arg Met Pro
 180 185 190
 Leu Val Ala Tyr Asn Ile Asn Leu Ser Thr Asp Asn Leu Glu Ile Ala
 195 200 205
 Thr Lys Ile Ala Lys Asn Ile Arg His Ile Asn Gly Gly Leu Arg Tyr
 210 215 220
 Val Lys Ala Met Gly Val Glu Leu Lys Glu Arg Asn Ile Thr Gln Val
 225 230 235 240
 Ser Ile Asn Met Thr Asp Tyr Thr Arg Thr Ala Leu Tyr Arg Ala Phe
 245 250 255
 Glu Leu Val Arg Ile Glu Ala Arg Arg Tyr Gly Val Thr Ile Leu Gly
 260 265 270
 Ser Glu Ile Val Gly Leu Val Pro Met Glu Ala Leu Ile Asp Thr Ala
 275 280 285
 Ser Tyr Tyr Leu Gly Leu Glu Asn Phe Ser Met Arg Gln Val Leu Glu
 290 295 300
 Ser Arg Ile Met Glu
 305

<210> 7711

<211> 102

<212> PRT

<213> B.fragilis

<400> 7711

Arg Arg Asn Gln Asp Met Lys Ser Val Leu Ile Thr Phe Asp Gln Ala
 1 5 10 15
 Tyr Tyr Glu Arg Ile Ile Ala Leu Leu Asp Arg Leu Gly Cys Arg Gly
 20 25 30
 Phe Thr Tyr Leu Glu Arg Val Gln Gly Arg Gly Ser Lys Thr Gly Asp
 35 40 45
 Pro His Phe Gly Ser His Ala Trp Pro Ser Met Cys Ser Ala Ile Ile
 50 55 60
 Thr Val Val Asp Asp Lys Lys Val Asp Pro Leu Leu Asp Ala Leu His
 65 70 75 80
 Arg Met Asp Met Gln Thr Glu Gln Leu Gly Leu Arg Ala Phe Val Thr
 85 90 95
 Asn Val Glu Arg Ser Ile
 100

<210> 7712

<211> 75

<212> PRT

<213> B.fragilis

<400> 7712

Asp Thr Val Gln Thr Pro Thr Gly Gly Ser Ser Glu Glu Tyr Trp Ser
 1 5 10 15
 Met Gly Ala Ser Leu Asn Gln Pro Ser Ser Val Lys Asp Glu Gly Ser
 20 25 30
 Met Gly Arg Lys Leu Leu Leu Tyr Lys Asn Arg Val Gln His Val Trp
 35 40 45
 Cys Val Val Cys Ile Glu Gly Ile Met Gln Thr Ser Tyr Ser Arg Leu
 50 55 60
 His His Ala Ala Val Ser Ile Asp Glu Arg Ser
 65 70 75

<210> 7713
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 7713

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Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
1          5          10          15
Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
20        25        30
Leu Val Gly Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
35        40        45
Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
50        55        60
Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
65        70        75        80
Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
85        90        95
Lys Leu Ser Ser
100

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<210> 7714
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 7714

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Phe Met Glu Lys Asn Ser Met Lys Gly Glu Arg Pro Met Arg Leu Asn
1          5          10          15
Arg Trp Leu Gly Val Leu Ile Leu Leu Leu Ser Gly Val Trp Ser Val
20        25        30
Arg Ala Gln Asp Leu Leu Pro Ala Cys Pro Gln Val Asp Lys Gly Thr
35        40        45
Lys Ala Cys Lys Pro Met Arg Glu Pro Gly Ser Leu Gly Asp Thr Val
50        55        60
Ser Val Lys Ile Val Phe Pro Val Ala Phe Lys Gly Val Gly Arg Asn
65        70        75        80
Glu Val Val Asp Ser Leu Gly Ile Leu Ala Pro Val Leu Glu His Leu
85        90        95
Arg Leu Val Gln Asn Gly Ser Ser Glu Asp Thr Val Arg Ile Val His
100       105       110
Ile Gly Asp Ser His Ile Arg Gly His Ile Phe Pro Arg Thr Thr Gly
115       120       125
Ala Arg Leu Thr Glu Thr Phe Gly Ala Ile Ser Tyr Thr Asp Met Gly
130       135       140
Val Asn Gly Ala Thr Cys Leu Thr Phe Thr His Pro Asp Arg Ile Ala
145       150       155       160
Ala Ile Ala Ala Leu Lys Pro Glu Leu Leu Ile Leu Ser Phe Gly Thr
165       170       175
Asn Glu Ser His Asn Arg Lys Tyr Asn Ser Asn Val His Tyr Arg Gln
180       185       190
Met Glu Glu Leu Leu Glu Leu Leu Arg Asp Ser Leu Pro Asp Val Pro
195       200       205
Ile Leu Met Thr Thr Pro Pro Gly Ser Tyr Glu Ser Phe Arg Gln Arg
210       215       220
Arg Arg Arg Arg Thr Tyr Ala Ile Asn Pro Arg Thr Val Thr Ala Val
225       230       235       240
Asn Thr Ile His Asp Phe Ala Arg Arg His Lys Leu Val Val Trp Asp
245       250       255

```

Met Tyr Asn Val Val Gly Gly Ser Leu Arg Ala Cys Lys Asn Trp Ser
 260 265 270
 Asp Ala Arg Leu Met Arg Pro Asp His Val His Tyr Leu Pro Glu Gly
 275 280 285
 Tyr Thr Leu Gln Gly Glu Leu Leu Tyr Glu Ala Ile Ile Lys Ala Tyr
 290 295 300
 Asn Glu Tyr Val Ser His
 305 310

<210> 7715

<211> 220

<212> PRT

<213> B.fragilis

<400> 7715

Gln Gln Lys Asn Gly Leu Met Ile Glu Asn Ala Lys Glu Asn Ser Gln
 1 5 10 15
 Arg Val Glu Leu Lys Asp Arg Ile Ile Glu Thr Ala Ser Glu Ala Phe
 20 25 30
 Thr Thr His Gly Ile Lys Ser Ile Thr Met Asp Asp Ile Ala Ala Ser
 35 40 45
 Leu Gly Ile Ser Lys Arg Thr Leu Tyr Glu Val Phe Gln Asp Lys Glu
 50 55 60
 Ser Leu Leu Thr Gln Cys Ile Leu Lys Arg Gln Glu Glu Met Asn Ala
 65 70 75 80
 Phe Leu Ala Glu Thr Leu Ala Asn Ser Lys Asn Val Leu Glu Val Ile
 85 90 95
 Leu Val Cys Tyr Gln Arg Ser Ile Glu Thr Phe His Arg Thr Asn Lys
 100 105 110
 Arg Phe Phe Glu Asp Ile Lys Lys Tyr Pro Lys Val His Ser Leu Leu
 115 120 125
 Lys Asn Tyr Arg Glu Arg Asp Ser Asp Ser Thr Ile Glu Phe Phe Lys
 130 135 140
 Met Gly Ile Lys Gln Gly Ile Phe Arg Asp Asp Val Asn Phe Ala Ile
 145 150 155 160
 Val Asn Leu Leu Val His Glu Gln Leu Asp Leu Leu Met Asn Thr Asp
 165 170 175
 Ile Cys Asn Lys Tyr Ser Phe Leu Glu Val Tyr Glu Ala Ile Met Phe
 180 185 190
 Thr Tyr Ile Arg Gly Ile Ser Thr Glu Lys Gly Ala Lys Val Leu Glu
 195 200 205
 Asp Phe Ile Thr Glu Tyr Arg Lys Gln Arg Ile His
 210 215 220

<210> 7716

<211> 1021

<212> PRT

<213> B.fragilis

<400> 7716

Leu Pro Ile Asp Leu Tyr Pro Asp Ile Asp Thr Asn Thr Ile Met Val
 1 5 10 15
 Met Thr Ala Tyr Pro Gly Ala Ser Ala Ser Asp Ile Glu Asn Asn Val
 20 25 30
 Thr Arg Pro Leu Glu Asn Thr Leu Asn Ala Val Ser Asn Leu Lys His
 35 40 45
 Ile Thr Ser Arg Ser Ser Glu Asn Met Ser Leu Ile Thr Leu Glu Phe
 50 55 60
 Glu Tyr Gly Asn Asp Ile Asp Val Leu Thr Asn Asp Val Arg Asp Lys

65	70	75	80
Leu Asp Met Val	Ser Ser Gln Leu Pro	Asp Asp Val Glu Asn Pro	Ile
	85	90	95
Ile Phe Lys Phe	Ser Thr Asp Met	Ile Pro Ile Val	Leu Leu Ser Val
	100	105	110
Gln Ala Asn Glu	Ser Gln Ser Ala	Leu Tyr Lys Ile	Leu Asp Asp Arg
	115	120	125
Val Val Asn Pro	Leu Ala Arg Ile	Pro Gly Val Gly	Thr Val Ser Ile
	130	135	140
Ser Gly Ala Pro	Gln Arg Glu Ile	Gln Val Tyr Cys	Asp Pro Gly Lys
145	150	155	160
Leu Glu Ala Tyr	Asn Leu Thr Ile	Glu Thr Ile Ser	Ser Ile Ile Gly
	165	170	175
Ala Glu Asn Lys	Asn Ile Pro Gly	Gly Asn Phe Asp	Ile Gly Asn Glu
	180	185	190
Thr Tyr Ser Leu	Arg Val Glu Gly	Glu Phe Asp Asp	Ser Arg Gln Leu
	195	200	205
Glu Asp Val Val	Val Gly Ser Tyr	Asn Gly Ala Asn	Val Tyr Leu Arg
210	215	220	
Asp Val Ala Arg	Val Val Asp Thr	Val Glu Glu Arg	Ala Gln Glu Thr
225	230	235	240
Tyr Asn Asn Gly	Val Lys Gly Ala	Met Ile Val Val	Gln Lys Gln Ser
	245	250	255
Gly Ala Asn Ser	Val Asp Ile Ser	Lys Lys Val Ala	Glu Ala Leu Pro
	260	265	270
Lys Leu Gln Lys	Asn Leu Pro Ser	Asp Val Lys Leu	Gly Val Ile Val
	275	280	285
Asp Thr Ser Asp	Asn Ile Leu Asn	Thr Ile Asp Ser	Leu Ala Glu Thr
290	295	300	
Val Leu Tyr Ala	Leu Leu Phe Val	Val Ile Val Val	Phe Leu Phe Leu
305	310	315	320
Gly Arg Trp Arg	Ala Thr Leu Ile	Ile Cys Ile Thr	Ile Pro Leu Ser
	325	330	335
Leu Ile Ala Ser	Phe Ile Tyr Leu	Ala Val Thr Gly	Asn Thr Ile Asn
	340	345	350
Ile Ile Ser Leu	Ser Ser Leu Ser	Ile Ala Ile Gly	Met Val Val Asp
	355	360	365
Asp Ala Ile Val	Val Leu Glu Asn	Val Thr Thr His	Ile Glu Arg Gly
370	375	380	
Ser Asp Pro Lys	Gln Ala Ala Val	His Gly Thr Asn	Glu Val Ala Ile
385	390	395	400
Ser Val Ile Ala	Ser Thr Leu Thr	Met Ile Ala Val	Phe Phe Pro Leu
	405	410	415
Thr Met Val Ser	Gly Met Ser Gly	Val Met Phe Lys	Gln Leu Gly Trp
	420	425	430
Met Met Cys Ala	Ile Met Phe Ile	Ser Thr Val Ala	Ala Leu Ser Leu
	435	440	445
Thr Pro Met Leu	Cys Ser Gln Leu	Leu Arg Leu Gln	Lys Lys Gln Ser
450	455	460	
Lys Thr Phe Lys	Leu Leu Phe Gly	Pro Ile Glu Lys	Gly Leu Asp Ala
465	470	475	480
Leu Asp Thr Gly	Tyr Ala Arg Met	Leu Asn Trp Ala	Val Arg His Arg
	485	490	495
Pro Ile Val Ile	Phe Gly Cys Ile	Val Phe Phe Val	Val Ser Leu Phe
	500	505	510
Cys Ala Lys Ser	Ile Gly Thr Glu	Phe Phe Pro Ala	Gln Asp Asn Ala
	515	520	525
Arg Ile Ala Val	Gln Leu Glu Leu	Pro Ile Gly Thr	Arg Lys Glu Leu
530	535	540	

Ala Gln Glu Val Ser Glu Lys Leu Thr Asn Gln Trp Leu Asn Lys Tyr
 545 550 555 560
 Lys Gly Val Met Thr Val Cys Asn Tyr Thr Val Gly Gln Ala Asp Ser
 565 570 575
 Asp Asn Thr Trp Ala Ser Met Gln Asp Asn Gly Ser His Ile Ile Ser
 580 585 590
 Phe Asn Ile Ser Leu Val Asp Pro Gly Asp Arg Asp Ile Ser Leu Glu
 595 600 605
 Gln Val Cys Asp Glu Met Arg Glu Asp Leu Lys Lys Tyr Pro Glu Phe
 610 615 620
 Ser Lys Ala Gln Val Ile Leu Gly Gly Ser Asn Thr Gly Met Ser Ala
 625 630 635 640
 Gln Ala Ser Ala Asp Phe Glu Val Tyr Gly Tyr Ser Met Glu Glu Thr
 645 650 655
 Asp Ser Val Ala Ala Arg Leu Lys Arg Glu Leu Leu Asn Val Lys Gly
 660 665 670
 Val Ser Glu Val Asn Ile Ser Arg Ser Asp Tyr Gln Pro Glu Tyr Gln
 675 680 685
 Val Asp Phe Asp Arg Glu Lys Leu Ala Leu His Gly Leu Asn Leu Ala
 690 695 700
 Thr Ala Gly Asn Tyr Leu Arg Asn Arg Ile Asn Gly Ala Ile Ala Ser
 705 710 715 720
 Lys Tyr Arg Glu Asp Gly Asp Glu Tyr Asp Ile Lys Val Arg Tyr Ala
 725 730 735
 Pro Glu Tyr Arg Thr Ser Ile Glu Ser Ile Glu Asn Ile Leu Ile Tyr
 740 745 750
 Asn Ser Arg Gly Glu Ala Val Arg Val Lys Glu Leu Gly Lys Val Val
 755 760 765
 Glu Arg Phe Ala Pro Pro Thr Ile Glu Arg Lys Asp Arg Glu Arg Ile
 770 775 780
 Val Thr Val Ser Ala Val Ile Ser Gly Glu Ala Leu Gly Asn Val Val
 785 790 795 800
 Asn Ala Gly Asn Ala Ile Ile Asp Lys Met Asp Ile Pro Ser Asn Val
 805 810 815
 Thr Ile Gln Val Ala Gly Ser Tyr Glu Asp Gln Gln Asp Ser Phe Arg
 820 825 830
 Asp Leu Gly Thr Leu Ala Ile Leu Ile Val Val Leu Val Phe Ile Val
 835 840 845
 Met Ala Ala Gln Phe Glu Ser Leu Thr Tyr Pro Phe Ile Ile Met Phe
 850 855 860
 Ser Leu Pro Phe Ala Phe Ser Gly Val Leu Met Ala Leu Phe Phe Thr
 865 870 875 880
 Lys Ser Thr Leu Ser Val Met Ser Leu Leu Gly Ala Ile Met Leu Ile
 885 890 895
 Gly Ile Val Val Lys Asn Gly Ile Val Leu Ile Asp Tyr Ile Thr Leu
 900 905 910
 Cys Arg Glu Arg Gly Leu Ala Val Leu Asn Ser Val Val Thr Ala Gly
 915 920 925
 Lys Ser Arg Leu Arg Pro Val Leu Met Thr Thr Ala Thr Thr Val Leu
 930 935 940
 Gly Met Ile Pro Met Ala Ile Gly Gly Gly Gln Gly Ser Glu Met Trp
 945 950 955 960
 Ser Pro Met Ala Ile Ala Val Ile Gly Gly Leu Thr Val Ser Thr Ile
 965 970 975
 Leu Thr Leu Val Leu Ile Pro Thr Leu Tyr Cys Val Phe Ala Gly Thr
 980 985 990
 Gly Ile Lys His Gln Arg Lys Val Leu Arg Arg Lys Arg Glu Leu Glu
 995 1000 1005
 Ala Tyr Phe Glu Glu His Lys Asp Glu Met Ile Lys Lys

1010

1015

1020

<210> 7717
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7717
 Arg Asn Ile Glu Asn Lys Gly Tyr Thr Lys Thr Gly Asn Lys Glu Ile
 1 5 10 15
 Pro Lys Glu Asp Lys Gln Leu Lys Leu Tyr Glu Gln Asn Glu Met
 20 25 30
 Phe Leu Lys Gln Lys Asp Ala Phe Gly Gly Gly Cys Thr Ala Leu Gly
 35 40 45
 Gly Leu Cys Thr Gly Thr Gly Gly Lys Gly His Arg Ala Thr Asp Ala
 50 55 60

<210> 7718
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 7718
 Gly Glu Asn Arg Asp Phe Asn Arg Asn Leu Thr Glu Ile Lys Arg Gly
 1 5 10 15
 Leu Ser Lys Lys Leu Gly Gly Thr Pro Trp Arg Glu Leu Asn Gly Asn
 20 25 30
 Gln Thr Glu Ile Glu Arg Lys Thr Ala Leu Thr Leu Leu Met Arg Leu
 35 40 45
 Gly Arg His Leu Phe Gln Gly Arg Lys Glu Gln Ser Phe Gly Phe Lys
 50 55 60
 Lys Thr Cys Tyr Leu Glu Thr Lys Gly Leu Ile
 65 70 75

<210> 7719
 <211> 419
 <212> PRT
 <213> B.fragilis

<400> 7719
 Arg Ile Met Ser Glu Asn Leu Ile Ile Phe Asn Ala Lys Val Val Thr
 1 5 10 15
 Pro Leu Gly Phe Ser Ala Arg Lys Gly Lys Glu Met Ala Glu Leu Arg
 20 25 30
 Ile Leu Glu Lys Ala Thr Val Glu Val Val Asp Gly Ile Ile Thr Tyr
 35 40 45
 Val Gly Pro Asn Arg Gly Glu Val Arg Asp Gly Tyr Tyr His His Phe
 50 55 60
 Trp His Tyr Asn Ala Arg Gly Lys Cys Leu Leu Pro Gly Phe Val Asp
 65 70 75 80
 Ser His Thr His Phe Val Phe Gly Gly Glu Arg Ala Glu Glu Phe Ser
 85 90 95
 Trp Arg Leu Lys Gly Glu Ser Tyr Met Ser Ile Met Gln Arg Gly Gly
 100 105 110
 Gly Ile Ala Ser Thr Val Gln Ala Thr Arg Glu Leu Ser Phe Ile His
 115 120 125
 Leu Arg Ser Lys Ala Glu Gly Leu Leu Lys Lys Met Thr Ala Met Gly
 130 135 140
 Ile Thr Thr Val Glu Gly Lys Ser Gly Tyr Gly Leu Asn Arg Glu Thr

145 150 155 160
 Glu Leu Leu Gln Leu Lys Val Met Arg Ser Leu Asn Lys Asp Glu Gly
 165 170 175
 Val Arg Val Asp Ile Val Pro Thr Phe Leu Gly Ala His Ala Leu Pro
 180 185 190
 Asp Glu Tyr Lys Glu Arg Pro Asp Asp Tyr Ile Asp Phe Leu Ile Arg
 195 200 205
 Glu Leu Leu Pro Val Ile Gln Arg Asp Ser Leu Ala Glu Phe Cys Asp
 210 215 220
 Val Phe Cys Glu Glu Gly Val Phe Ser Ile Glu Gln Ser Arg Arg Leu
 225 230 235 240
 Leu Thr Ala Ala Gly Asp Tyr Gly Leu Leu Pro Lys Leu His Ala Asp
 245 250 255
 Glu Ile Val Ser Leu Gly Gly Ala Glu Leu Ala Ala Glu Leu Gly Ala
 260 265 270
 Val Ser Ala Asp His Leu Leu His Ala Ser Asp Ala Gly Ile Glu Ala
 275 280 285
 Met Ala Arg Lys Gly Val Val Ala Thr Leu Leu Pro Leu Thr Ala Phe
 290 295 300
 Ala Leu Lys Glu Pro Tyr Ala Arg Gly Arg Asp Met Ile Asp Ala Gly
 305 310 315 320
 Cys Ala Val Ala Leu Ala Thr Asp Leu Asn Pro Gly Ser Cys Phe Ser
 325 330 335
 Gly Ser Ile Pro Leu Thr Phe Ala Leu Ala Cys Ile His Met Gln Leu
 340 345 350
 Thr Val Glu Glu Ala Ile Thr Ala Leu Thr Leu Asn Gly Ala Ala Ala
 355 360 365
 Leu Asn Arg Ala Asp Ser Ile Gly Ser Ile Glu Val Gly Lys Lys Gly
 370 375 380
 Asp Phe Val Val Leu Asp Ser Asp Asn Tyr His Ile Leu Pro Tyr Tyr
 385 390 395 400
 Val Gly Met Asn Cys Val Asn Thr Thr Ile Lys Gly Gly Met Leu Tyr
 405 410 415
 Pro Ser Val

<210> 7720

<211> 489

<212> PRT

<213> B.fragilis

<400> 7720

His Gln Arg Arg Ile Cys Val Asn Phe Met Gln Ile Leu Leu Ser Phe
 1 5 10 15
 Tyr Gly Phe Tyr Leu Ser Leu Gln Leu Leu Ile Lys Leu Arg Ala Cys
 20 25 30
 Met Lys Asn Tyr Leu Lys Tyr Ser Leu Trp Leu Thr Leu Ile Val Leu
 35 40 45
 Phe Ala Leu Ile Gly Met His Trp Leu Pro Ala Ile Thr Ile Asp Gly
 50 55 60
 His Thr Met Arg Arg Val Asp Leu Leu Ser Asp Val Arg Met Pro Glu
 65 70 75 80
 Pro Asp Lys Asp Glu Val Val Ala Asp Ser Leu Pro Pro Val Pro Val
 85 90 95
 Val Lys Pro Ala Phe Val Asp Thr Cys Arg Ser Gly Met Thr Cys Ile
 100 105 110
 Glu Asp Tyr Ser Asp Ser Thr Met Arg Gly Met Thr Pro Phe Tyr Arg
 115 120 125
 Ala Leu Asp Glu Ile Gln Ser Lys Gly Arg Leu Val Arg Ile Ala Val

130 135 140
 Phe Gly Asp Ser Phe Ile Glu Ala Asp Ile Phe Thr Ala Asp Leu Arg
 145 150 155 160
 Glu Met Leu Gln Lys Arg Phe Gly Gly Cys Gly Val Gly Phe Val Thr
 165 170 175
 Ile Thr Ser Met Thr Ser Gly Tyr Arg Pro Thr Val Arg His Ser Phe
 180 185 190
 Gly Gly Trp Ser Ser His Ala Val Thr Asp Ser Val Tyr Phe Asp Lys
 195 200 205
 Lys Lys Gln Gly Ile Ser Gly His Tyr Phe Val Pro Arg Glu Arg Ala
 210 215 220
 Tyr Val Glu Leu Arg Gly Gln Asn Lys Tyr Ala Ser Leu Leu Asp Thr
 225 230 235 240
 Cys Gln Ile Ala Ser Ile Phe Phe Tyr Asn Lys Gly Glu Val Asn Leu
 245 250 255
 Ser Val Cys Val Asn Arg Gly Glu Ala Glu Ala Arg Asp Phe Ser Thr
 260 265 270
 Thr Gly Arg Leu Gln Gln Met Lys Val Asn Gly Arg Ile Gly Ser Val
 275 280 285
 Arg Trp Asp Ile Asn Arg Ala Asp Ser Thr Leu Phe Tyr Gly Val Ala
 290 295 300
 Met Asp Gly Thr Gln Gly Val Val Val Asp Asn Phe Ser Leu Arg Gly
 305 310 315 320
 Ser Ser Gly Leu Ser Leu Arg Ser Ile Pro Ser Lys Met Leu Gln Glu
 325 330 335
 Phe Asn Ala Gln Arg Pro Tyr Asp Leu Ile Ile Leu Glu Tyr Gly Leu
 340 345 350
 Asn Val Ala Thr Glu Arg Gly Arg Asn Tyr Asp Pro Tyr Lys Lys Gly
 355 360 365
 Leu Leu Thr Ala Ile Asn His Leu Lys Glu Cys Phe Pro Gln Ala Gly
 370 375 380
 Phe Leu Leu Leu Ser Val Gly Asp Arg Asp Tyr Lys Thr Asp Thr Gly
 385 390 395 400
 Glu Leu Arg Thr Met Pro Gly Val Lys Asn Leu Ile Arg Tyr Gln Gln
 405 410 415
 Asn Ile Ala Ala Glu Ser Gly Ile Ala Phe Trp Asn Met Phe Glu Ala
 420 425 430
 Met Gly Gly Glu Gly Ser Met Ala Gly Leu Val His Ala Lys Pro Ser
 435 440 445
 Leu Ala Asn Tyr Asp Tyr Thr His Ile Asn Phe Arg Gly Gly Arg His
 450 455 460
 Leu Ala Gly Leu Leu Tyr Glu Thr Leu Ile Tyr Gly Lys Glu Gln Tyr
 465 470 475 480
 Glu Arg Arg Lys Ala Tyr Glu Ala Glu
 485

<210> 7721
 <211> 213
 <212> PRT
 <213> B.fragilis

<400> 7721
 Asp Ala Phe Met Lys Lys Leu Cys Phe Leu Leu Leu Met Ser Trp Val
 1 5 10 15
 Val Met Asp Val Thr Ala Gln Asn Val Val Tyr Ser Asn Leu Lys Gly
 20 25 30
 Leu Leu Ala Cys Glu Gly Asp Thr Val Ala Ser Leu Lys Val Glu Lys
 35 40 45
 Arg Thr Lys Asn His Ile Leu Met Thr Gly Gly Ala Asp Tyr Lys Ile

50		55		60
Ser Ala Gly Pro Asp Asp	Ser Met Cys Lys Tyr	Leu Lys Ser Arg Cys		
65	70	75	80	
Tyr Ala Val Gln Ala Asp	Thr Ser Leu Tyr Val	Asn Cys Lys Arg Leu		
	85	90	95	
Arg Tyr Lys Lys Phe Arg	Phe Gly Gly Trp Tyr	Ala Pro Ala Leu Arg		
	100	105	110	
Ile Gly Asp His Ile Tyr	Phe Ser Ala Ile Pro	Leu Gly Ser Val Ala		
	115	120	125	
Ala Gly Ser Asp Ala Thr	Met Asp Val Met Leu	Gly Gly Gln Phe Gly		
	130	135	140	
Asp Ala Ile Ala Ala Ser	Ala Leu Ile Ser Lys	Arg Val Tyr Tyr Glu		
145	150	155	160	
Ile Asp Pro Glu Thr Asn	Lys Val Gly Phe Val	Gly Lys Glu Arg Met		
	165	170	175	
Glu Glu Leu Leu Gly Gly	His Pro Asp Trp Lys	Ala Ala Tyr Leu Asn		
	180	185	190	
Glu Asn Ser Glu Ser Ala	Lys Val Thr Asp Lys	Tyr Leu Arg Leu Leu		
	195	200	205	
Lys Ala Glu Glu Lys				
210				

<210> 7722

<211> 309

<212> PRT

<213> B.fragilis

<400> 7722

Asn Leu Asn Met Lys Arg Cys Phe Gln Leu Val Ala Leu Leu Ala Val	
1	5
Val Leu Leu Gly Ser Cys Thr Gly Gly Lys Asp Lys Ser Ala Ala Glu	10
	15
	20
Lys Thr Glu Glu Lys Pro Lys Val Lys Leu Ala Asp Val Thr Ala Arg	25
	30
	35
Pro Val Glu Gln Ile Gln Glu Tyr Thr Ala Thr Val Glu Ala Glu Val	40
	45
	50
Lys Asn Asn Ile Ala Pro Ser Ser Pro Val Arg Ile Asp Lys Ile Phe	55
65	60
	65
Val Glu Val Gly Asp His Val Ser Lys Gly Gln Lys Leu Val Gln Met	70
	75
	80
	85
Asp Ala Ala Asn Leu Lys Gln Thr Lys Leu Gln Leu Asp Asn Gln Glu	90
	95
	100
Val Glu Phe Asn Arg Ile Asp Glu Leu Tyr Lys Val Gly Gly Ala Ser	105
	110
	115
Lys Ser Glu Trp Asp Ala Ala Lys Met Ala Tyr Asp Val Lys Lys Thr	120
	125
	130
Ala Tyr Gln Asn Leu Leu Glu Asn Thr Ser Leu Leu Ser Pro Ile Ser	135
145	140
	145
Gly Val Val Thr Ala Arg Asn Tyr Asp Ser Gly Asp Met Tyr Ser Gly	150
	155
	160
	165
Gly Asn Pro Val Leu Thr Val Glu Lys Ile Thr Pro Val Lys Leu Leu	170
	175
	180
Ile Asn Val Ser Glu Val Tyr Phe Thr Lys Val Lys Lys Gly Ala Pro	185
	190
	195
Val Asn Val Lys Leu Asp Val Tyr Gly Asp Glu Ala Phe Glu Gly Lys	200
	205
	210
	215
Ile Ser Leu Ile Tyr Pro Thr Ile Asp Pro Ser Thr Arg Thr Phe Gln	220
225	225
	230
Val Glu Ile Gln Leu Pro Asn Gln Asn Gln Lys Val Arg Pro Gly Met	235
	240

245 250 255
 Phe Ala Arg Ala Ser Leu Asn Phe Gly Thr Glu Glu Asn Val Val Val
 260 265 270
 Pro Asp Leu Ala Ile Val Lys Gln Ala Gly Ala Arg Arg Pro Leu Cys
 275 280 285
 Val Cys Ile Gln Gly Trp Lys Ser Asp Ile Gln Gln Ser Gly Thr Gly
 290 295 300
 Thr Ser His Gly Gly
 305

<210> 7723

<211> 453

<212> PRT

<213> B.fragilis

<400> 7723

Asn Tyr Cys Met Asn Lys Met Lys Cys Phe Leu Ser Lys Lys Met Leu
 1 5 10 15
 Leu Ala Val Val Val Leu Leu Ser Val Gly Tyr Val Gln Ala Gln Glu
 20 25 30
 Ala Lys Asp Ile Val Leu Leu Thr Leu Asp Lys Ala Leu Glu Ile Ala
 35 40 45
 Leu Ser Glu Asn Pro Thr Met Lys Val Ala Gly Gln Glu Ile Gln Leu
 50 55 60
 Lys Lys Glu Ala Lys Lys Glu Ala Tyr Gly Gly Leu Phe Pro Glu Val
 65 70 75 80
 Ser Leu Thr Gly Ser Tyr Ser Arg Thr Leu Lys Lys Gln Thr Met Val
 85 90 95
 Met Asp Phe Gly Gly Glu Ser Gln Thr Ile Gln Val Gly Ser Asp Asn
 100 105 110
 Ser Tyr Asn Gly Gly Leu Asn Val Ser Leu Pro Val Phe Ala Pro Thr
 115 120 125
 Leu Tyr Lys Ser Ile Asn Leu Thr Lys Thr Asp Val Glu Leu Ala Val
 130 135 140
 Glu Lys Ala Arg Ser Ser Lys Leu Asp Leu Val Asn Gln Val Thr Lys
 145 150 155 160
 Ala Tyr Tyr Gln Leu Leu Leu Ala Gln Asp Ser Tyr Lys Val Leu Leu
 165 170 175
 Gln Ser Tyr Ala Gln Ala Glu Ala Asn Tyr Glu Val Val Lys Ala Lys
 180 185 190
 Tyr Glu Gln Gly Thr Val Ser Glu Tyr Asp Lys Ile Arg Ala Asp Val
 195 200 205
 Gln Val Arg Ser Leu Lys Pro Ser Val Val Ser Ala Gly Asn Gly Val
 210 215 220
 Asn Leu Ala Arg Leu Gln Leu Gln Val Leu Met Gly Met Asp Thr Glu
 225 230 235 240
 Val Glu Ile Ala Ala Asp Gly Asn Leu Lys Asp Tyr Glu Met Val Met
 245 250 255
 Phe Arg Arg Gln Met Glu Ser Asn Gln Leu Asn Leu Asn Asn Ser
 260 265 270
 Asp Leu Lys Gln Leu Asp Leu Asn Ala Asp Leu Leu Lys Lys Thr Leu
 275 280 285
 Ala Val Gln Arg Thr Asn Phe Met Pro Thr Leu Ala Ala Ser Phe Asn
 290 295 300
 Tyr Ser Tyr Thr Ser Leu Asn Asn Asp Phe Lys Met Ser His Tyr Lys
 305 310 315 320
 Trp Phe Pro Tyr Ser Thr Val Gly Leu Ser Leu Ser Ile Pro Leu Phe
 325 330 335
 Lys Ala Ser Asn Phe Thr Lys Val Lys Gln Thr Lys Ile Gln Met Gln

340 345 350
 Gln Leu Ala Glu Asn Arg Thr Asn Val Tyr Arg Gln Leu Thr Met Gln
 355 360 365
 Ala Thr Ser Tyr Leu Asp Asn Met Ala Ala Ser Thr Glu Gln Val Val
 370 375 380
 Ser Asn Lys Glu Gly Ile Val Gln Ala Glu Lys Gly Arg Leu Ile Ala
 385 390 395 400
 Gln Lys Arg Tyr Glu Val Gly Lys Gly Thr Ile Leu Glu Leu Asn Asp
 405 410 415
 Ser Glu Val Ala Leu Thr Gln Ala Gln Leu Thr Tyr Asn Gln Ser Ile
 420 425 430
 Tyr Asp Tyr Leu Val Ala Lys Ala Asp Leu Asp Gln Val Leu Gly Arg
 435 440 445
 Glu Glu Val Thr Glu
 450

<210> 7724
 <211> 159
 <212> PRT
 <213> B.fragilis

<400> 7724

Phe Ser Ala Ile Ala Met Ala Glu Leu Gly Asn Ile Ser Glu Arg Arg
 1 5 10 15
 Val Ala Pro Val Asn Tyr Gly Val Ala Cys Leu Pro Glu Phe Leu Val
 20 25 30
 Ala Asn Pro Gly Leu Asn Ser Gly Phe Met Ile Pro Gln Tyr Ala Ala
 35 40 45
 Ala Ser Met Val Ser Gln Asn Lys Met Tyr Cys Tyr Ala Ala Ser Ser
 50 55 60
 Asp Ser Ile Val Ser Ser Asn Gly Gln Glu Asp His Val Ser Met Gly
 65 70 75 80
 Ala Asn Ala Ala Thr Lys Leu Phe Arg Ile Met Asp Asn Leu Glu His
 85 90 95
 Ile Leu Ala Ile Glu Leu Met Asn Ala Ala Gln Gly Ile Glu Phe Arg
 100 105 110
 Arg Pro Ala Lys Thr Ser Pro Ile Leu Glu Arg Tyr Leu Ala Ala Tyr
 115 120 125
 Arg Lys Glu Val Pro Phe Val Lys Asp Asp Ile Val Met Tyr Lys Glu
 130 135 140
 Ile His Lys Thr Val Ala Phe Leu Asn Arg Thr Arg Ser Glu Tyr
 145 150 155

<210> 7725
 <211> 525
 <212> PRT
 <213> B.fragilis

<400> 7725

Cys Val Arg Ile Thr Tyr Ile Ile Cys Leu Lys Ala Ile Arg Phe Arg
 1 5 10 15
 Glu Asn Tyr Tyr Met Lys Pro Leu Leu Lys Pro Ile Met Asn Met Phe
 20 25 30
 Pro Ile Asp Ile Asp Phe Ser Arg Leu Leu Glu Ala Phe Lys Tyr Asn
 35 40 45
 Pro Asp Ala Pro Met Ile Phe Ser Ser Gly Ile Phe Leu Trp Leu Phe
 50 55 60
 Ala Ala Phe Met Val Ile Tyr Thr Leu Leu Gln His Arg Asn Thr Val
 65 70 75 80

Arg Ile Leu Phe Val Ala Leu Phe Ser Tyr Tyr Phe Tyr Tyr Lys Ser
 85 90 95
 Ser Gly Thr Tyr Phe Phe Leu Leu Ala Ile Val Thr Val Thr Asp Phe
 100 105 110
 Met Ile Ala Trp Leu Met Asp Arg Thr Asp Val Arg Trp Lys Arg Lys
 115 120 125
 Phe Cys Val Val Leu Ser Val Ser Val Asn Leu Gly Leu Leu Cys Tyr
 130 135 140
 Phe Lys Tyr Thr Asn Phe Leu Gly Gly Val Ile Ala Ser Leu Met Gly
 145 150 155 160
 Gly Glu Phe Thr Ala Leu Asp Ile Phe Leu Pro Val Gly Ile Ser Phe
 165 170 175
 Phe Thr Phe Gln Ser Leu Ser Tyr Thr Ile Asp Val Tyr Arg Lys Glu
 180 185 190
 Ile Lys Pro Leu Thr Ser Leu Leu Asp Tyr Ala Phe Tyr Val Ser Phe
 195 200 205
 Phe Pro Gln Leu Val Ala Gly Pro Ile Val Arg Ala Arg Asp Phe Ile
 210 215 220
 Pro Gln Ile Arg Lys Pro Leu Tyr Val Ser Gln Glu Met Phe Gly Arg
 225 230 235 240
 Gly Ile Phe Leu Ile Val Ala Gly Leu Phe Lys Lys Ala Val Ile Ser
 245 250 255
 Asp Tyr Ile Ser Ile Asn Phe Val Glu Arg Ile Phe Asp Asn Pro Thr
 260 265 270
 Leu Tyr Ser Gly Val Glu Asn Leu Met Gly Leu Tyr Gly Tyr Ala Leu
 275 280 285
 Gln Ile Tyr Cys Asp Phe Ser Gly Tyr Ser Asp Met Ala Ile Gly Ile
 290 295 300
 Ala Leu Leu Leu Gly Phe His Phe Asn Leu Asn Phe Asn Ser Pro Tyr
 305 310 315 320
 Lys Ser Ala Ser Ile Thr Glu Phe Trp Arg Arg Trp His Ile Ser Leu
 325 330 335
 Ser Ser Trp Leu Arg Asp Tyr Leu Tyr Ile Ser Leu Gly Gly Asn Arg
 340 345 350
 His Gly Lys Phe Arg Gln Tyr Leu Asn Leu Ile Ile Thr Met Phe Leu
 355 360 365
 Gly Gly Leu Trp His Gly Ala Ser Trp Asn Phe Val Leu Trp Gly Thr
 370 375 380
 Phe His Gly Val Ala Leu Ala Leu His Lys Ala Trp Met Ser Ile Ile
 385 390 395 400
 Gly Arg Lys Lys Gly Glu Thr Ser His Gly Ile Arg Arg Val Leu Gly
 405 410 415
 Val Ile Ile Thr Phe His Phe Val Cys Phe Cys Trp Ile Phe Phe Arg
 420 425 430
 Asn Ala Asp Phe His Asn Ser Met Asp Met Leu Asn Gln Ile Phe Thr
 435 440 445
 Ala Phe Arg Pro Gln Leu Phe Pro Gln Leu Ile Glu Gly Tyr Trp Arg
 450 455 460
 Val Phe Ala Leu Met Ala Val Gly Phe Leu Leu His Phe Ala Pro Asp
 465 470 475 480
 Ser Trp Glu Asn Ala Val Cys Arg Gly Val Ile Lys Leu Pro Phe Leu
 485 490 495
 Gly Lys Ala Ile Val Met Val Ala Met Ile Tyr Leu Val Ile Gln Met
 500 505 510
 Lys Ser Ser Glu Ile Gln Pro Phe Ile Tyr Phe Gln Phe
 515 520 525

<210> 7726

<211> 63

<212> PRT
 <213> B.fragilis

<400> 7726

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Ser Lys Leu Val Pro Gly Asp Arg Tyr Val Tyr Val Tyr Lys Asp Gly
1          5          10          15
Lys Val Thr Tyr Asn Lys Val Glu Leu Gly Arg Arg Met Gly Ala Glu
          20          25          30
Tyr Glu Leu Lys Ser Gly Val Pro Asn Asn Ser Gln Val Val Ile Ala
          35          40          45
Gly Gln Thr Arg Leu Ile Asn Gly Thr Glu Val Glu Val Glu Lys
          50          55          60

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<210> 7727
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 7727

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Ile Lys Glu Thr Ser Ser Ile Ser Arg Met Gln Ser Asn His Leu Leu
1          5          10          15
Lys Thr Gln Lys Ser Phe Ser Asp Ile Tyr Ser Ile Tyr Tyr Val Arg
          20          25          30
Met Leu Arg Phe Ser Gln Thr Tyr Val Ile Ala Glu Glu Asp Ala Glu
          35          40          45
Asn Ile Val Gln Asp Thr Phe Leu Tyr Leu Trp Glu His Leu Glu Leu
          50          55          60
Leu Glu Asp Ile Asp His Leu Asp Ala Phe Leu Phe Thr Leu Ile Lys
          65          70          75          80
Asn Arg Cys Leu Asn Phe Leu Lys His Gln Ser Tyr Ile Gln Ala Lys
          85          90          95
Thr Cys Ser Leu Lys Ala Asp Glu Glu Leu Glu Ser Gln Leu Asn Leu
          100          105          110
Tyr Ala Leu Glu Gln Phe Asp Glu Ala Val Ser Ser Ile Ser Glu Val
          115          120          125
Glu Asn Leu Leu Ser Arg Thr Met Gln Lys Leu Pro Glu Arg Cys Arg
          130          135          140
Glu Ile Phe Leu Leu Ser Arg Ile Glu Gly Leu Lys Tyr Lys Glu Ile
          145          150          155          160
Ala Glu Arg Leu Asp Ile Ser Val Asn Thr Val Glu Asn Gln Ile Ser
          165          170          175
Ile Ala Leu Arg Lys Leu Arg Ser Glu Leu Lys Glu Tyr Leu Pro Leu
          180          185          190
Leu Val Phe Ile Ile
          195

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<210> 7728
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 7728

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Gln Lys Val Lys Ser Ser Asn Arg Lys Arg Lys Asn Lys Arg Gly Lys
1          5          10          15
Arg Ile Glu Asn Glu Gly Asn Arg Glu Lys Arg Gly Tyr Phe Leu Gly
          20          25          30
Lys Gly Ile Ser Ala Gly Pro Lys Gly Ile Val Val Ile Lys Ala Ser
          35          40          45
Met Gly Ala Gly Asn Phe Lys Lys Gln Gly Trp Glu Trp Lys Gln Glu

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50 55 60
 Glu Leu Thr Ile Lys Pro His Arg Thr Leu Leu Lys Asn
 65 70 75

<210> 7729
 <211> 811
 <212> PRT
 <213> B.fragilis

<400> 7729

Thr Tyr Asp Lys Val Met Lys Lys Asn Leu Leu Gln Lys Trp Tyr Val
 1 5 10 15
 His Gln Gln Leu Glu Leu Thr His Ile Ile Arg Ile Met Lys Leu Ser
 20 25 30
 Val Phe Phe Ile Phe Val Phe Leu Phe Gln Leu Gln Ala Gly Asn Val
 35 40 45
 Lys Ser Gln Glu Val Arg Val Thr Leu Ser Lys Ser Ser Leu Thr Phe
 50 55 60
 Gly Glu Leu Met Arg Glu Ile Glu Lys Gln Thr Asn Tyr Leu Phe Met
 65 70 75 80
 Tyr Arg Asp Ala Glu Ile Asp Leu Ser Gln Lys Ile Glu Val Lys Asn
 85 90 95
 Thr Ser Ala Thr Val Lys Glu Ile Leu Thr Thr Ala Leu Arg Asn Lys
 100 105 110
 Lys Leu Thr Tyr Lys Phe Ser Asn Asn Tyr Ile Ser Leu Tyr Val Asp
 115 120 125
 Lys Glu Lys Ala Pro Glu Thr Met Val Thr Gln Gln Glu Arg Lys Ile
 130 135 140
 Lys Ile Lys Gly Val Val Ile Asp Gln Val Gly Glu Pro Ile Ile Gly
 145 150 155 160
 Ala Asn Ile Ser Leu Lys Gly Gln Pro Gly Thr Gly Asp Ile Thr Asp
 165 170 175
 Ile Glu Gly Asn Phe Thr Leu Glu Val Pro Glu Lys Ala Val Leu Val
 180 185 190
 Ile Ser Tyr Ile Gly Tyr Leu Thr Gln Glu Ile Pro Val Asn Gly Lys
 195 200 205
 Ala Ser Phe Asn Ile Gln Met Lys Glu Asp Thr Lys Thr Leu Asp Glu
 210 215 220
 Val Val Val Val Gly Tyr Gly Ser Gln Lys Lys Gln Thr Val Thr Ala
 225 230 235 240
 Ser Ala Ser Thr Leu Lys Val Ser Ser Leu Lys Asn Val Pro Thr Ala
 245 250 255
 Asn Leu Ala Ser Ser Leu Gly Gly Arg Val Ser Gly Val Leu Ile Gln
 260 265 270
 Gln Thr Gly Gly Glu Ala Gly Tyr Asp Asp Pro Thr Ile Ile Ile Arg
 275 280 285
 Gly Ser Ser Ser Pro Thr Ser Ser Ser Pro Leu Ile Val Val Asp Gly
 290 295 300
 Ile Ile Gly Arg Ser Met Ser Gln Leu Asp Pro Ser Glu Ile Glu Ser
 305 310 315 320
 Met Thr Val Leu Lys Asp Ala Ser Ala Val Ala Pro Tyr Gly Ala Arg
 325 330 335
 Gly Ala Asn Gly Val Ile Leu Ile Thr Thr Lys Arg Gly Lys Ser Gly
 340 345 350
 Lys Ala Gln Val Asp Tyr Asn Phe Lys Ile Gly Phe Gly Thr Pro Thr
 355 360 365
 Arg Met Pro Glu Ile Ala Ser Tyr Asp His Ala Arg Phe Met Asn
 370 375 380
 Asp Ala Trp Arg Asn Lys Glu Met Asp Leu Gly Glu Asp Pro Gly Met

385 390 395 400
 Tyr Gly Ile Tyr Thr Glu Glu Glu Leu Gln Lys Phe Arg Asp Gly Ser
 405 410 415
 Asp Pro Tyr Gly Tyr Pro Asn Thr Asp Trp Asn Lys Glu Val Leu Leu
 420 425 430
 Pro Arg Ala Trp Gln Gln Met His Ser Leu Thr Ala Ser Gly Gly Ser
 435 440 445
 Asp Lys Val Lys Tyr Phe Ala Gly Phe Gly Tyr Val Lys Gln Asp Ala
 450 455 460
 Leu Tyr Gly Asp Thr Arg Thr Asn Lys Ser Thr Ser Gly Phe Asn Arg
 465 470 475 480
 Tyr Asn Ala Arg Val Asn Ile Asp Ala Asn Ile Val Asp Lys Tyr Leu
 485 490 495
 Asn Leu Ser Ala Asp Met Ala Tyr Arg Gln Glu Asp Arg Asn Ser Ile
 500 505 510
 Ala Gly Ser Thr Ser Asp Val Phe Asn Asn Met His Arg Asn Pro Gln
 515 520 525
 Thr Asp Pro Gly Arg Phe Pro Asp Gly Asn Leu Gly Lys Val Ser Leu
 530 535 540
 Gly Val Asn Pro Ile Gly Leu Ala Thr Glu Gly Gly Trp Val Lys Asp
 545 550 555 560
 Arg Lys Ser Val Leu Asn Thr Arg Phe Met Leu Asp Phe Asn Val Pro
 565 570 575
 Gly Leu Glu Gly Leu Asn Leu Lys Gly Ile Phe Ser Tyr Asp Lys Ile
 580 585 590
 Phe Asn Ser Ile Lys Arg Trp Thr Thr Pro Val Asp Phe Tyr Val Trp
 595 600 605
 Asn Lys Ile Thr Gly Glu Tyr Asp Gly His Ser Pro Asn Arg Glu Gly
 610 615 620
 Ala Glu Leu Lys Gln Thr Tyr Ser Thr Ser Gln Ala Met Thr Phe Glu
 625 630 635 640
 Phe Gln Ala Ala Tyr Asn Lys Thr Ile Ala Gln Asp His Gln Leu Gly
 645 650 655
 Ala Leu Phe Val Phe Ser Arg Ser Glu Gly Ala Asp Glu Asn Phe Trp
 660 665 670
 Ala Ser Arg Thr Lys Tyr Arg Ile Tyr Ser Ile Gln Gln Leu Phe Ala
 675 680 685
 Gly Pro Asp Lys Asp Lys Asp Asn Ser Gly Ser Ala Ser Glu Thr Gly
 690 695 700
 Lys Val Gly Ser Val Phe Arg Leu Thr Tyr Asn Tyr Lys Glu Lys Tyr
 705 710 715 720
 Met Leu Glu Ala Asn Gly Arg Leu Asp Gly Ser Glu Lys Phe Pro Lys
 725 730 735
 Ser Lys Arg Tyr Gly Phe Phe Pro Ser Val Ser Ala Ala Trp Arg Ile
 740 745 750
 Ser Ala Glu Pro Ile Met Glu Pro Phe Ser Gly Val Leu Ser Asn Leu
 755 760 765
 Lys Leu Arg Thr Ser Trp Gly Arg Ala Gly Thr Asp Asn Ile Gly Gln
 770 775 780
 Phe Gln Tyr Met Ser Ala Tyr Gly Thr Gly Gly Asp Ala Val Phe Gly
 785 790 795 800
 Arg Ser Glu Ser Gly Asn Ser Pro Gly Ile His
 805 810

<210> 7730
 <211> 346
 <212> PRT
 <213> B.fragilis

<400> 7730

Tyr Phe Phe Cys Ile Ser Phe Gly Gly Lys Cys Ile Leu Asp Cys Leu
 1 5 10 15
 Tyr Tyr Lys Thr Thr Gln Gly Thr Met Asn Asp Glu Leu Glu Lys Tyr
 20 25 30
 Phe Ala Gly Thr Leu Ser Ala Thr Glu Lys Thr Glu Phe Leu Asn Lys
 35 40 45
 Leu Arg Asp Asn Pro Glu Ala Lys Lys Glu Phe Ala Arg Met Lys Ala
 50 55 60
 Val Trp Ala Val Ser Gly Leu Met Ala Gln Glu Gly Asp Pro Gln Lys
 65 70 75 80
 Thr Val Arg Gly Ile Ala Glu Phe Asp Lys Arg Leu Lys Arg Arg Ser
 85 90 95
 Val His Arg Phe Arg Ile Gly Phe Phe Lys Tyr Ala Ala Met Ile Val
 100 105 110
 Leu Leu Ile Ser Thr Thr Trp Phe Ile Ala Asn Trp Tyr Thr Gln Lys
 115 120 125
 Glu Gln Lys Lys Gln Tyr Thr Glu Ile Asn Val Pro Lys Gly Gln Arg
 130 135 140
 Val Asn Met Thr Leu Pro Asp Gly Thr Ser Val Trp Leu Ser Pro Gln
 145 150 155 160
 Ser Lys Ile Lys Ile Pro Asn Glu Phe Asn Arg Lys Asn Arg Met Val
 165 170 175
 Glu Leu Asn Gly Glu Gly Tyr Phe Glu Val Thr Lys Asn Ala Lys Lys
 180 185 190
 Pro Phe Ile Val Lys Thr Gln Leu Phe Asn Ile Gln Val Leu Gly Thr
 195 200 205
 Arg Phe Asn Val Phe Ala Tyr Ala Gly Lys Glu Ser Lys Phe Glu Thr
 210 215 220
 Cys Leu Val Glu Gly Arg Val Leu Val Tyr Asn Lys Asn Asn Lys Asn
 225 230 235 240
 Glu Lys Val Tyr Leu Asn Pro His Glu Lys Val Ser Leu Val Asn Asn
 245 250 255
 Arg Met Val Val Ser Thr Ser Asn Phe Asp Asn Glu Glu Tyr Leu Lys
 260 265 270
 Ser Gly Ile Phe Ser Phe Arg Ser Lys Pro Phe Gly Glu Ile Leu Ser
 275 280 285
 Tyr Leu Thr Leu Trp Tyr Asn Val Gln Phe Asn Phe Thr Gly Asp Val
 290 295 300
 Lys Leu Asp Glu Arg Ile Ser Gly Lys Ile Arg Gln Ser Glu Asp Val
 305 310 315 320
 Asp Asn Ile Leu Ile Ala Leu Gln Gly Val Tyr Pro Phe Lys Phe Lys
 325 330 335
 Lys Thr Asp Asp Glu His Tyr Glu Ile Tyr
 340 345

<210> 7731

<211> 381

<212> PRT

<213> B.fragilis

<400> 7731

Glu Leu His Gly Asp Ala Pro Glu Gln Thr Thr Ser Val Asn Ser Ser
 1 5 10 15
 Ile Cys Pro Leu Met Val Pro Ala Val Met Pro Tyr Leu Ala Gly Gln
 20 25 30
 Asn Pro Glu Ile Ala Pro Gly Tyr Thr Glu Thr Arg Phe Pro Asn Pro
 35 40 45
 Asn Ile Thr Trp Glu Thr Ser Glu Met Phe Asn Ile Gly Ile Asp Ala

50 55 60
 Ser Phe Phe Asn Gly Lys Leu Asn Leu Glu Ala Asp Trp Phe Tyr Lys
 65 70 75 80
 Lys Thr Asn Asp Ile Leu Arg Glu Arg Thr Asp Met Pro Ala Ile Leu
 85 90 95
 Gly Tyr Lys Leu Pro Ala Ala Asn Val Gly Lys Val Asp Asn Arg Gly
 100 105 110
 Ile Asp Leu Asn Ile Thr His Arg Asn His Leu Arg Asp Phe Asn Tyr
 115 120 125
 Ser Ile Ala Gly Asn Leu Thr Trp Ala Arg Asn Lys Val Ile Asp Leu
 130 135 140
 Leu Glu Pro Ala Gly Glu Lys Asn Asn Pro Arg Gln Arg Ser Thr Gly
 145 150 155 160
 His Ser Met Ser Gln Tyr Phe Gly Tyr Glu Ala Leu Gly Leu Phe Gln
 165 170 175
 Ser Asp Glu Glu Ala Asn Asn Trp Pro Gln Pro Gln Phe Gly Lys Ala
 180 185 190
 Lys Ala Gly Asp Ile Lys Tyr Lys Asp Gln Asn Gly Asp Gly Ile Ile
 195 200 205
 Asp Ala Glu Asp Glu Ile Ala Ile Gly Arg Ser Asn Tyr Pro Glu Leu
 210 215 220
 Val Tyr Gly Leu Asn Leu Asn Ala Glu Trp Lys Gly Phe Asp Ile Thr
 225 230 235 240
 Phe Phe Phe Gln Gly Ala Ala Leu Ala Asp Phe Tyr Tyr Asn Gly Tyr
 245 250 255
 Leu Ala Phe Pro Tyr Ile Glu Gly Arg Gly Gly Ala Leu Leu Glu His
 260 265 270
 His Ile Gly Asn Thr Trp Thr Pro Glu Asn Pro Lys Ala Glu Phe Pro
 275 280 285
 Arg Leu Tyr Tyr Gly Gly Asn Ala Asn Asn Gln Leu Phe Ser Ser Phe
 290 295 300
 Trp Met Arg Asn Gly Ser Tyr Leu Arg Leu Lys Asn Val Glu Ile Gly
 305 310 315 320
 Tyr Asp Phe Lys Lys Leu Leu Leu Ser Lys Val Ser Glu Ile Gln Gly
 325 330 335
 Leu Arg Leu Tyr Phe Ser Gly Ser Asn Leu Leu Thr Trp Ser Gln Ile
 340 345 350
 Lys Tyr Phe Asp Pro Glu Leu Arg Ser Thr Asp Gly Ser Ala Tyr Pro
 355 360 365
 Gln Met Lys Thr Phe Val Phe Gly Ala Asn Ile Thr Phe
 370 375 380

<210> 7732
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 7732
 Phe Phe Phe Ile Phe Val Leu Met Glu Lys Tyr Tyr Ser Thr Asn Cys
 1 5 10 15
 Pro Ile Asn Thr Ile Thr Ile Ile Lys Thr Ile Ile Val Ala Met Leu
 20 25 30
 Phe Ile Ile Ala Ala Ile Ile Val Phe Ala Ser Gly Gly Tyr Trp Leu
 35 40 45
 Gly Ile Ser Ile Ile Leu Leu Leu Val Ile Met Val Val Thr Tyr
 50 55 60
 Phe Cys Ile Pro Arg Lys Ile Ile Val Thr Asp Thr Asp Ile Val Leu
 65 70 75 80
 Tyr Asn His Gly Phe Lys Arg Lys Ile Pro Lys Cys Asp Ile Leu Lys

85 90 95
 Ala Arg Ser Val Thr Ala Lys Asp Arg Asn Gly Leu Trp Arg Lys Phe
 100 105 110
 Ala Val Glu Gly Val Trp Gly Tyr Cys Gly Ile Tyr Ala Ser Lys Ile
 115 120 125
 His Lys Asn Leu Tyr Ile Tyr Ala Ser Gln Asn Lys Asn Trp Ile Leu
 130 135 140
 Ile Glu Thr Glu Arg Lys Asn Tyr Ile Val Ser Pro Glu Asn Leu Asp
 145 150 155 160
 Ile Ile Asp Val Ile Asn Lys
 165

<210> 7733
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 7733
 Asn Val Ile Met Lys Lys Ile Asn Thr Ala Leu Phe Cys Leu Phe Val
 1 5 10 15
 Leu Leu Phe Cys Ser Cys Asp Val Leu Asn Lys Ala Pro Leu Asp Glu
 20 25 30
 Ile Ala Asp Ser Phe Trp Ser Asp Glu Thr Leu Val Lys Tyr Tyr
 35 40 45
 Val Asn Asp Leu Tyr Ser Glu Ile Ser Val Asp Gly Leu Gln Leu Gln
 50 55 60
 Glu Asn Arg Ser Asp Asn Ser Val Ser Ala Gln Arg Asp Lys His Arg
 65 70 75 80
 Ala Ser Trp Phe Lys Phe Asn Tyr Asp Met Val Ser Ala Ser Asp
 85 90 95

<210> 7734
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 7734
 Leu Phe Pro Ser Phe Ser Cys Thr Leu Trp Val Glu Val Ile Ser Val
 1 5 10 15
 Leu Leu Gly Thr Val Arg Pro Leu Ile Val Ser Val Leu Lys Cys Thr
 20 25 30
 Val Met Val Leu Ala Pro Ala Asn Gly Thr Met Arg Met Val Val Leu
 35 40 45
 Arg Val Val Phe Gly Leu Asn Ala Ala Val Leu Phe Val Leu Ala Ala
 50 55 60
 Thr Thr Leu Val Glu Gly Pro Ile Phe His Asp Val Glu Phe Pro Pro
 65 70 75 80
 Cys Phe Thr Tyr Thr Pro Val Gln Leu Val Ile Val Leu Leu Gly Asn
 85 90 95
 Pro Val Gly Leu Met Val Ile Val Ser Leu His Asn Phe
 100 105

<210> 7735
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 7735
 Arg Tyr Lys Ser Ser Lys Asp Met Lys Ile Leu Leu Leu Gly Ser Gly

1	5	10	15
Gly Arg Glu His	Ala Leu Ala Trp Lys	Ile Ala Gln Ser Pro	Lys Val
20	25	30	
Glu Lys Leu Phe	Ile Ala Pro Gly Asn	Ala Gly Thr Gly	Glu Val Gly
35	40	45	
Glu Asn Val Asn	Ile Lys Ala Thr Asp	Phe Ala Ala Leu	Gly Ala Phe
50	55	60	
Ala Leu Glu Glu	Ser Ile Asp Met	Ile Val Val Gly	Pro Glu Asp Pro
65	70	75	80
Leu Val Glu Gly	Ile Tyr Asp His	Phe Gln Ser Asn	Pro Cys Leu Lys
85	90	95	
Asn Ile Ala Ile	Ile Gly Pro Ser	Lys Glu Gly Ala	Arg Leu Glu Gly
100	105	110	
Ser Lys Glu Phe	Ala Lys Glu Phe	Met His Arg His	His Ile Pro Thr
115	120	125	
Ala Arg Tyr Gln	Ser Val Thr Ala	Asp Thr Leu Asn	Glu Gly Leu Ala
130	135	140	
Phe Leu Glu Thr	Leu Glu Ala Pro	Tyr Val Leu Lys	Ala Asp Gly Leu
145	150	155	160
Cys Ala Gly Lys	Gly Val Leu Ile	Leu Pro Thr Leu	Glu Glu Ala Lys
165	170	175	
Lys Glu Leu Lys	Glu Met Leu Gly	Gly Met Phe Gly	Asn Ala Ser Ala
180	185	190	
Thr Val Val Ile	Glu Glu Phe Leu	Ser Gly Ile Glu	Cys Ser Val Phe
195	200	205	
Val Leu Thr Asp	Gly Asp His Tyr	Lys Val Leu Pro	Val Ala Lys Asp
210	215	220	
Tyr Lys Arg Ile	Gly Glu Gly Asp	Lys Gly Leu Asn	Thr Gly Gly Met
225	230	235	240
Gly Ser Val Thr	Pro Val Pro Phe	Ala Asp Glu Val	Phe Met Glu Lys
245	250	255	
Val Arg Thr Arg	Ile Ile Glu Pro	Thr Val Asn Gly	Leu Lys Ala Glu
260	265	270	
Gly Ile Thr Tyr	Lys Gly Phe Ile	Phe Leu Gly Leu	Ile Asn Val Lys
275	280	285	
Gly Glu Pro Met	Val Ile Glu Tyr	Asn Val Arg Met	Gly Asp Pro Glu
290	295	300	
Thr Glu Ser Val	Met Leu Arg Ile	Gln Ser Asp Leu	Val Glu Leu Leu
305	310	315	320
Glu Gly Val Ala	Glu Gly Asn Leu	Asp Ala Arg Ser	Leu Val Ile Asp
325	330	335	
Pro Arg Thr Ala	Thr Cys Val Met	Met Val Ser Gly	Gly Tyr Pro Glu
340	345	350	
Ala Tyr Gln Lys	Gly Tyr Ala Ile	Asn Gly Leu Glu	Ala Ala Arg Ala
355	360	365	
Thr Asp Ser Ile	Leu Phe His Ala	Gly Thr Ala Met	Lys Asp Gly Gln
370	375	380	
Ala Val Thr Ser	Gly Gly Arg Val	Leu Ala Ile Cys	Ser Tyr Gly Asn
385	390	395	400
Asp Lys Ala Asp	Ala Leu Ala Gln	Cys Tyr Lys Val	Ala Asp Met Ile
405	410	415	
Asp Phe Lys Asp	Lys Asn Tyr Arg	Arg Asp Ile Gly	Phe Asp Leu
420	425	430	

<210> 7736

<211> 246

<212> PRT

<213> B.fragilis

<400> 7736

Leu Phe Leu Ser Val Tyr Asn Phe Val Asp Ser Asn Ile Pro Met Lys
 1 5 10 15
 Ala Ile Glu Ile Gln Lys Glu Leu Glu Thr Tyr Ile Asp Pro Val Lys
 20 25 30
 Arg Glu Tyr Leu Pro Gly Phe Phe Lys Thr Gly Lys Gly Gln Tyr Gly
 35 40 45
 Glu Gly Asp Arg Phe Leu Gly Ile Val Val Pro Ala Thr Arg Leu Val
 50 55 60
 Ala Lys Lys Tyr Lys Asn Ala Pro Phe Glu Val Met Ala Glu Leu Leu
 65 70 75 80
 Gln Ser Glu Trp His Glu Cys Arg Leu Cys Ala Leu Leu Met Met Val
 85 90 95
 Glu Arg Phe Lys Lys Ser Gly Gly Glu Glu Arg Glu Ala Ile Tyr Arg
 100 105 110
 Phe Tyr Leu Ser Gln Thr Glu Arg Ile Asn Asn Trp Asp Leu Val Asp
 115 120 125
 Leu Ser Ala Pro Tyr Ile Val Gly Glu Tyr Leu Lys Asp Lys Ser Arg
 130 135 140
 Asp Asp Leu Tyr Arg Leu Ala Glu Ser Thr Leu Leu Trp Asp Gln Arg
 145 150 155 160
 Ile Ala Val Val Ser Thr Val Thr Phe Ile Arg Asn Asn Asp Phe Ile
 165 170 175
 Asp Ile Leu Arg Leu Ser Glu Leu Leu Gln His Lys His Asp Leu
 180 185 190
 Met Arg Lys Ala Ile Gly Trp Met Leu Arg Glu Met Gly Lys Arg Asp
 195 200 205
 Lys Thr Leu Leu Leu Gln Phe Leu Asp Lys Tyr Ser Lys Val Met Pro
 210 215 220
 Arg Thr Met Leu Arg Tyr Ser Ile Glu Lys Leu Thr Asp Glu Glu Arg
 225 230 235 240
 Lys Leu Tyr Met Gly Arg
 245

<210> 7737

<211> 65

<212> PRT

<213> B.fragilis

<400> 7737

Asp Phe Arg Ser Glu Arg Glu Thr Ile Ile Lys Met Ala Tyr Glu Met
 1 5 10 15
 Ile Leu Ala Ser Tyr Leu His Met Pro Ser Tyr Phe Leu Lys Thr Phe
 20 25 30
 Thr Glu Tyr Pro Val Val Trp Val Phe Val Ala Gly Pro Glu Ser Pro
 35 40 45
 Phe Phe Lys Val Ser Gly Leu Leu Ala Ser Asp Phe Ile Trp Gln Thr
 50 55 60
 Arg
 65

<210> 7738

<211> 68

<212> PRT

<213> B.fragilis

<400> 7738

Thr Thr Leu Phe Arg Tyr Phe Leu Gly Leu Val Val Val Arg Ile Val
 1 5 10 15

Phe Lys Glu Leu Ile Ser Met Ile Phe Arg His Tyr Leu Phe Ala Asn
 20 25 30
 Ile Thr Glu Ala Pro Lys Ser Arg Ser Asp Ile Glu Glu Asn Arg Glu
 35 40 45
 Met Ser Asn Trp Thr Ala Cys Pro Val Arg Val Leu Leu His Lys Lys
 50 55 60
 Asn Thr Ile Phe
 65

<210> 7739

<211> 614

<212> PRT

<213> B.fragilis

<400> 7739

Ser Leu Cys Pro Phe Phe Met Asp Thr Asn Gln Glu Leu Lys Thr Ser
 1 5 10 15
 Glu Tyr Leu Lys Gly Ile Val Ser Asn Leu Pro Glu Arg Pro Gly Ile
 20 25 30
 Tyr Gln Tyr Leu Asn Ala Glu Gly Thr Ile Ile Tyr Val Gly Lys Ala
 35 40 45
 Lys Asn Leu Lys Arg Arg Val Tyr Ser Tyr Phe Ser Lys Glu His Gln
 50 55 60
 Pro Gly Lys Thr Arg Val Leu Val Ser Lys Ile Ala Asp Ile Arg Tyr
 65 70 75 80
 Ile Val Val Asn Ser Glu Glu Asp Ala Leu Leu Leu Glu Asn Asn Leu
 85 90 95
 Ile Lys Lys Tyr Lys Pro Arg Tyr Asn Val Leu Leu Lys Asp Asp Lys
 100 105 110
 Thr Tyr Pro Ser Ile Cys Val Gln Asn Glu Tyr Phe Pro Arg Val Phe
 115 120 125
 Lys Thr Arg Arg Ile Ile Arg Asn Gly Ser Ser Tyr Tyr Gly Pro Tyr
 130 135 140
 Ser His Ser Pro Ser Met His Ala Val Leu Asp Leu Ile Lys His Leu
 145 150 155 160
 Tyr Pro Leu Arg Thr Cys Asn Leu Asn Leu Ser Pro Glu Asn Ile Arg
 165 170 175
 Ala Gly Lys Phe Asn Val Cys Leu Glu Tyr His Ile Lys Asn Cys Ala
 180 185 190
 Gly Pro Cys Ile Gly Leu Gln Ser Glu Glu Tyr Leu Lys Asn Ile
 195 200 205
 Ala Glu Ile Lys Glu Ile Leu Lys Gly Asn Thr Gln Glu Ile Ser Arg
 210 215 220
 Leu Leu Tyr Glu Arg Met Gln Asp Leu Ala Ala Glu Met Lys Phe Glu
 225 230 235 240
 Glu Ala Gln Lys Val Lys Glu Lys Tyr Ala Leu Ile Glu Asn Tyr Arg
 245 250 255
 Ser Lys Ser Glu Val Val Ser Ser Val Leu His Asn Ile Asp Val Phe
 260 265 270
 Ser Ile Glu Glu Asp Gly Glu Lys Ser Ala Phe Ile Asn Tyr Leu His
 275 280 285
 Ile Thr Asn Gly Ala Ile Asn Gln Ala Phe Thr Phe Glu Tyr Lys Lys
 290 295 300
 Lys Leu Asn Glu Thr Lys Glu Glu Leu Leu Thr Leu Gly Ile Ile Glu
 305 310 315 320
 Met Arg Glu Arg Tyr Lys Ser Ala Ser Arg Glu Ile Ile Val Pro Phe
 325 330 335
 Asp Ile Glu Ile Glu Leu Asn Asp Val Thr Phe Thr Ile Pro Gln Arg
 340 345 350

Gly Asp Lys Lys Lys Leu Leu Glu Leu Ser Leu Leu Asn Val Lys Gln
 355 360 365
 Tyr Lys Ala Asp Arg Met Lys Gln Ala Glu Lys Leu Asn Pro Glu Gln
 370 375 380
 Arg Ser Met Arg Leu Met Lys Glu Ile Gln Gln Glu Leu His Leu Asp
 385 390 395 400
 Arg Leu Pro Met Gln Ile Glu Cys Phe Asp Asn Ser Asn Ile Gln Gly
 405 410 415
 Thr Asp Ala Val Ala Ala Cys Val Val Phe Lys Lys Ala Lys Pro Ser
 420 425 430
 Lys Ser Asp Tyr Arg Lys Tyr Asn Ile Lys Thr Val Val Gly Ala Asp
 435 440 445
 Asp Tyr Ala Ser Met Lys Glu Val Val Arg Arg Arg Tyr Gln Arg Ala
 450 455 460
 Ile Glu Glu Glu Ser Pro Leu Pro Asp Leu Ile Ile Thr Asp Gly Gly
 465 470 475 480
 Lys Gly Gln Met Glu Val Val Arg Gln Val Met Glu Glu Leu Gln Leu
 485 490 495
 Asp Ile Pro Ile Ala Gly Leu Ala Lys Asp Arg Lys His Arg Thr Ser
 500 505 510
 Glu Val Leu Phe Gly Phe Pro Pro Gln Thr Ile Gly Ile Lys Gln His
 515 520 525
 Ser Pro Leu Phe Arg Leu Leu Glu Gln Ile Gln Asp Glu Val His Arg
 530 535 540
 Phe Ala Ile Thr Phe His Arg Asp Lys Arg Ser Lys Arg Gln Val Ala
 545 550 555 560
 Ser Ala Leu Asp Asn Ile Lys Gly Ile Gly Glu Lys Thr Lys Thr Ala
 565 570 575
 Leu Leu Lys Glu Phe Lys Ser Val Lys Arg Ile Lys Glu Ala Thr Ile
 580 585 590
 Glu Glu Val Ser Ala Ile Ile Gly Glu Ser Lys Ala Lys Ile Ile Lys
 595 600 605
 Glu Gly Leu Asp Asn His
 610

<210> 7740

<211> 288

<212> PRT

<213> B.fragilis

<400> 7740

Thr Arg Ile Pro Ile Thr Asn Leu Lys Gln Phe Met Asp Lys Glu Arg
 1 5 10 15
 Lys Pro His Lys His Thr Glu Ala Ala Thr Ser Ser Pro Leu Leu Ser
 20 25 30
 Ile Arg Gly Leu Ser Ala Ala Tyr Asp Gly Arg Thr Val Leu His Asp
 35 40 45
 Val Asp Leu Glu Val Tyr Glu His Asp Phe Leu Gly Ile Ile Gly Pro
 50 55 60
 Asn Gly Gly Gly Lys Thr Thr Leu Ile Lys Cys Ile Leu Gly Leu Leu
 65 70 75 80
 Arg Pro Thr Gly Gly Glu Ile Ile Lys Tyr His Glu Pro Leu Thr Thr
 85 90 95
 Gly Tyr Leu Pro Gln Tyr Asn Ser Ile Asp Arg Ser Phe Pro Ile Ser
 100 105 110
 Val Leu Glu Val Val Leu Ser Gly Leu Ser Ser Lys Lys Ser Leu Thr
 115 120 125
 Gly Arg Phe Asn Asp Arg His Arg Glu Lys Ala Arg Gln Val Ile His
 130 135 140

Arg Met Gly Leu Glu Gly Leu Glu His Arg Ala Ile Gly Gln Leu Ser
 145 150 155 160
 Gly Gly Gln Leu Gln Arg Ala Leu Leu Gly Arg Ala Ile Ile Ser Asp
 165 170 175
 Pro Gln Leu Leu Ile Leu Asp Glu Pro Ser Thr Tyr Ile Asp Lys Arg
 180 185 190
 Phe Glu Ala Arg Leu Tyr Gln Leu Leu Ala Glu Ile Asn Arg Asp Cys
 195 200 205
 Ala Ile Ile Leu Val Ser His Asp Ile Gly Thr Val Leu Gln Gln Val
 210 215 220
 Lys Asn Ile Ala Cys Val Asn Glu Thr Leu Asp Tyr His Pro Ala Ala
 225 230 235 240
 Ser Val Asn Thr Glu Trp Leu Glu Arg Asn Phe Asn Cys Pro Ile Glu
 245 250 255
 Leu Leu Gly His Gly Thr Leu Pro His Arg Val Leu Gly Glu His Cys
 260 265 270
 His Cys His Glu Lys Ser Ser Asp Thr Pro His Pro Gln Thr Asp Lys
 275 280 285

<210> 7741

<211> 530

<212> PRT

<213> B.fragilis

<400> 7741

Arg Asn Ser Pro Ile Ser Ile Trp Gly Ala Val Ser Thr Ile Val Arg
 1 5 10 15
 Lys His Cys Leu Met Ile Ser Gly Asn Thr Ile Asn His Lys Asn Asn
 20 25 30
 Met Ala Gly Leu Lys Ser Leu Val Lys Asp Thr Ala Leu Tyr Gly Leu
 35 40 45
 Ser Ser Met Val Gly Arg Phe Leu Asn Tyr Leu Leu Val Pro Leu Tyr
 50 55 60
 Thr Ala Val Leu Pro Ala Ala Ser Gly Gly Tyr Gly Val Val Thr Asn
 65 70 75 80
 Val Tyr Ala Trp Ala Gly Leu Ile Met Val Leu Leu Thr Phe Gly Met
 85 90 95
 Glu Thr Gly Phe Phe Arg Phe Ala Asn Lys Ser Glu Glu Asp Pro Val
 100 105 110
 Lys Val Tyr Ala Asn Ser Leu Ile Ser Val Gly Gly Ile Ser Leu Ile
 115 120 125
 Phe Ala Ile Leu Cys Leu Thr Phe Leu Gln Pro Val Ser His Leu Leu
 130 135 140
 Glu Tyr Gly Asp His Pro Asp Phe Ile Gly Met Met Ile Ile Val Met
 145 150 155 160
 Ala Leu Asp Ala Phe Leu Cys Ile Pro Phe Ala Tyr Leu Arg Phe Lys
 165 170 175
 Lys Arg Pro Ile Lys Phe Val Ala Ile Lys Phe Val Ser Ile Ile Ala
 180 185 190
 Asn Ile Val Leu Asn Leu Phe Phe Leu Leu Leu Cys Pro Trp Leu His
 195 200 205
 Glu His Phe Pro Ala Trp Val Asp Trp Phe Tyr Asn Pro Thr Tyr Leu
 210 215 220
 Val Gly Tyr Ile Phe Val Ser Asn Leu Ile Thr Thr Cys Leu Gln Leu
 225 230 235 240
 Phe Cys Leu Ile Pro Glu Leu Arg Gly Phe Ala Tyr Arg Val Asp Lys
 245 250 255
 Gln Leu Leu Lys Arg Met Leu Ile Tyr Ser Phe Pro Ile Leu Ile Phe
 260 265 270

Gly Leu Val Gly Ile Leu Asn Gln Thr Val Asp Lys Ile Ile Tyr Pro
 275 280 285
 Phe Leu Phe Ala Asp Arg Gln Glu Gly Leu Val Gln Leu Gly Ile Tyr
 290 295 300
 Gly Ala Ala Thr Lys Ile Ala Met Val Met Ala Met Phe Thr Gln Ala
 305 310 315 320
 Phe Arg Tyr Ala Tyr Glu Pro Phe Val Phe Gly Lys Gln Lys Glu Gly
 325 330 335
 Asp Asn Arg Arg Met Tyr Ala Gln Ala Met Lys Tyr Phe Leu Ile Phe
 340 345 350
 Ala Met Phe Ala Phe Leu Val Val Met Phe Tyr Leu Asp Leu Leu Arg
 355 360 365
 Tyr Met Val Ala Pro Asp Tyr Trp Ala Gly Leu Ser Val Val Ala Ile
 370 375 380
 Val Ile Gly Ala Glu Ile Phe Lys Gly Ile Tyr Phe Asn Leu Ser Phe
 385 390 395 400
 Trp Tyr Lys Leu Ile Asp Glu Thr Arg Trp Gly Ala Tyr Phe Ser Ile
 405 410 415
 Val Gly Cys Val Ile Ile Val Gly Met Asn Val Met Leu Val Pro Thr
 420 425 430
 Tyr Gly Phe Val Ala Ser Ala Trp Ala Ser Val Ala Gly Tyr Ala Val
 435 440 445
 Ile Thr Ile Leu Ser Tyr Trp Ile Gly Gln Lys Lys Tyr Pro Ile His
 450 455 460
 Tyr Asp Leu Lys His Leu Gly Thr Tyr Val Leu Phe Thr Ala Val Leu
 465 470 475 480
 Tyr Val Ile Gly Glu Trp Val Pro Ile Glu Asn Ile Val Leu Arg Leu
 485 490 495
 Ala Phe Arg Thr Val Leu Leu Leu Ile Phe Met Ala Tyr Val Val Arg
 500 505 510
 Lys Asp Leu Pro Leu Ser Gln Ile Pro Val Ile Asn Arg Ile Ile Lys
 515 520 525
 Lys Lys
 530

<210> 7742
 <211> 451
 <212> PRT
 <213> B.fragilis

<400> 7742
 Ile Ser Ile Ala Phe Ile Gly Ile Phe Glu Ser Thr Lys Leu Tyr Thr
 1 5 10 15
 Asp Lys Asn Ser Gln Lys Ser Arg Asn Glu Trp Lys His Ile Leu Asn
 20 25 30
 Phe Val Gly Lys Leu Thr Gly Ile Phe Met Val Leu Asn Tyr Ile Trp
 35 40 45
 Ile Ala Phe Phe Val Ile Ala Phe Val Val Ala Val Cys Lys Leu Leu
 50 55 60
 Phe Phe Gly Asp Thr Gln Ile Phe Thr Glu Ile Ile Asn Ser Thr Phe
 65 70 75 80
 Asp Ser Ser Lys Thr Ala Phe Glu Ile Ser Leu Gly Leu Thr Gly Val
 85 90 95
 Leu Ser Leu Trp Leu Gly Val Met Lys Ile Gly Glu Asn Ser Gly Leu
 100 105 110
 Ile Asn Ala Leu Ser Arg Trp Leu Ser Pro Val Phe Cys Arg Leu Phe
 115 120 125
 Pro Asp Ile Pro Lys Gly His Pro Val Met Gly Ser Ile Phe Met Asn
 130 135 140

Met Ser Ala Asn Met Leu Gly Leu Asp Asn Ala Ala Thr Pro Met Gly
 145 150 155 160
 Leu Lys Ala Met Lys Glu Leu Gln Glu Leu Asn Pro Lys Lys Asp Thr
 165 170 175
 Ala Ser Asn Pro Met Ile Met Phe Leu Val Ile Asn Thr Ser Gly Leu
 180 185 190
 Ile Ile Ile Pro Ile Ser Ile Met Val Tyr Arg Ala Gln Met Gly Ala
 195 200 205
 Ala Gln Pro Thr Asp Ile Phe Ile Pro Ile Leu Leu Ser Thr Phe Ile
 210 215 220
 Ser Thr Leu Val Gly Val Ile Ala Val Ser Ile Ser Gln Arg Ile Asn
 225 230 235 240
 Leu Ile Asn Lys Ala Ile Leu Thr Leu Met Gly Cys Leu Ser Leu Phe
 245 250 255
 Phe Gly Gly Ile Ile Tyr Leu Thr Thr Thr Leu Ser Arg Glu Glu Met
 260 265 270
 Gly Val Tyr Ser Thr Leu Ile Ala Asn Val Ile Leu Phe Ser Val Ile
 275 280 285
 Leu Leu Phe Ile Ile Ala Gly Ile Arg Lys Lys Ile Asn Val Tyr Asp
 290 295 300
 Ser Phe Val Glu Gly Ala Lys Glu Gly Phe Thr Thr Ala Val Arg Ile
 305 310 315 320
 Ile Pro Tyr Leu Val Ala Phe Leu Val Gly Ile Ala Val Phe Arg Thr
 325 330 335
 Ser Gly Ala Met Asp Ile Leu Val Gly Gly Ile Gly Ala Ile Val Glu
 340 345 350
 Phe Cys Gly Leu Asp Thr Gly Phe Val Gly Ala Leu Pro Thr Ala Leu
 355 360 365
 Met Lys Ser Leu Ser Gly Ser Gly Ala Asn Gly Leu Met Ile Asp Thr
 370 375 380
 Met Lys Gln Phe Gly Pro Asp Ser Phe Val Gly Arg Val Ser Cys Val
 385 390 395 400
 Val Arg Gly Ala Ser Asp Thr Thr Phe Tyr Ile Leu Ala Val Tyr Phe
 405 410 415
 Gly Ser Val Gly Ile Thr Lys Thr Arg Asn Ala Val Thr Cys Gly Leu
 420 425 430
 Ile Ala Asp Phe Ala Gly Ile Ile Ala Ala Ile Leu Ile Ser Tyr Leu
 435 440 445
 Phe Phe Phe
 450

<210> 7743

<211> 159

<212> PRT

<213> B.fragilis

<400> 7743

Tyr Met Asp Ala Phe Ile Glu Thr Val Ser Gln Ile Leu Ile Asp Trp
 1 5 10 15
 Gly Tyr Pro Gly Leu Phe Ile Ser Ala Leu Leu Ala Gly Ser Ile Val
 20 25 30
 Pro Phe Ser Ser Glu Ile Val Leu Leu Gly Leu Val Lys Leu Gly Leu
 35 40 45
 Asp Pro Thr Leu Cys Leu Ile Ser Ala Ser Leu Gly Asn Thr Ala Gly
 50 55 60
 Gly Met Thr Cys Tyr Tyr Met Gly Arg Leu Gly Arg Ile Asp Trp Ile
 65 70 75 80
 Glu Lys Tyr Phe Lys Val Lys Lys Glu Lys Ile Asp Lys Met Gln Arg
 85 90 95

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<210> 7744
<211> 408
<212> PRT
<213> B.fragilis
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<400> 7744															
Arg 1	Arg	Pro	Ala	Val 5	Leu	Leu	Cys	Leu	Ala 10	Cys	Asn	Glu	Ala	Gly 15	Arg
Thr	Val	Ser	Val 20	Thr	Val	Ser	Asn	Ala 25	Thr	Ser	Leu	Glu	Arg 30	Ser	Gly
Glu	Met	Val 35	Glu	Val	Ser	Met	Gly 40	Glu	Val	Ser	Ser	Lys 45	Leu	His	Leu
Pro	Asp	Thr 50	Ala	Gln	Ile	Val 55	Val	Val	Asp	Ala	Glu 60	Gly	Gln	Gln	Val
Pro 65	Tyr	Gln	Ile	Thr 70	Ser	Asp	Glu	Lys	Val	Ile 75	Phe	Pro	Val	Thr	Val 80
Gln	Ala	Asn	Gly 85	Ser	Ala	Val	Tyr	Thr	Ile 90	Lys	Ala	Gly	Ile	Pro	Gln 95
Glu	Cys	Pro 100	Val	Lys	Ala	Cys	Gly	Arg 105	Tyr	Tyr	Pro	Glu	Arg 110	Val	Asp
Asp	Val	Ala 115	Trp	Glu	Asn	Asp	Leu	Thr 120	Ala	Phe	Arg	Ala	Tyr 125	Gly	Pro
Ala	Leu	Gln 130	Glu	Thr	Gly	Glu	Arg 135	Ala	Phe	Gly	Tyr	Asp	Ile	Trp	Thr
Lys 145	Tyr	Asn	Thr 150	Thr	Glu	Pro	Val	Val	Glu	Ala 155	Arg	Tyr	Glu	Gly	Glu 160
Leu	Asn	Ser	Asp 165	Met	Lys	Ala	Lys	Ile	Ala 170	Glu	Leu	Gly	Lys	Thr	Asp 175
Pro	Lys	Ala 180	Ala	Gln	Glu	Leu	Tyr	Arg 185	Ser	Val	Ser	Tyr	His 190	Val	Asp
His	Gly	Asn 195	Gly	Leu	Asp	Cys	Tyr	Lys 200	Val	Gly	Pro	Thr 205	Leu	Gly	Gly
Gly	Thr 210	Thr	Ala	Leu	Met	Ala 215	Gly	Asp	Thr	Ile	Ile	Tyr 220	Pro	Tyr	Cys
Tyr 225	Ala	Thr	Gln	Glu	Ile	Leu 230	Asp	Asn	Gly	Pro	Leu	Arg	Phe	Thr	Val 240
Lys	Leu	Val	Tyr 245	Asn	Pro	Leu	Val	Val	Lys 250	Gly	Asp	Ser	Thr	Ile	Ile 255
Glu	Thr	Arg	Ile 260	Ile	Thr	Leu	Asp	Ala 265	Gly	Ser	Tyr	Cys	Asn	Lys	Thr 270
Val	Val	Ser 275	Tyr	Thr	Asn	Leu	Lys	Glu	Thr	Met	Pro	Leu	Ala	Val	Gly 285
Ile	Val 290	Leu	His	Glu	Pro	Asp 295	Gly	Ala	Ile	Val	Ala	Asp	Ala	Ala	Asn 300
Gly 305	Tyr	Met	Thr	Tyr	Val	Asp 310	Pro	Thr	Asp	Asn	Ala	Gly	Gly	Asp	Asn 320
Gly	Lys	Ile	Phe 325	Val	Gly	Ala	Ala	Phe	Pro	Thr	Leu	Val	Lys	Glu	Ala 335
Lys	Gly	Val	Leu 340	Phe	Pro	Glu	Lys	Glu	Lys	Lys	Glu	Leu	Arg	Gly	Gly 350

Ala Asp Gly His Val Leu Ala Ile Ser Glu Tyr Glu Pro Gly Ala Asp
 355 360 365
 Phe Thr Tyr Tyr Trp Gly Ala Ala Trp Ser Lys Ala Asp Ile Lys Asp
 370 375 380
 Ser Ala Ala Trp Asn Ala Tyr Met Ala Asp Phe Ala Gln Lys Val Arg
 385 390 395 400
 Asn Pro Leu Thr Val Thr Val Lys
 405

<210> 7745
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 7745
 Glu Ile Met Tyr Lys Val Ile Ile Ile Asp Asp Glu Lys Ala Ala Ile
 1 5 10 15
 Glu Thr Leu Arg Arg Asp Leu Glu Val Gln Ala Asp Leu Glu Ile Lys
 20 25 30
 Gly Thr Ala Gly Asn Gly Ala Lys Gly Lys Lys Leu Ile Met Asp Ile
 35 40 45
 His Pro Asp Leu Leu Phe Leu Asp Ile Glu Leu Pro Asp Ile Gln Gly
 50 55 60
 Ile Arg Leu Leu Ser Glu Ile Arg Glu Gln Val Leu Trp Asp Met Lys
 65 70 75 80
 Val Val Phe Tyr Thr Ala Tyr Asp Lys Tyr Leu Leu Gln Ala Leu Arg
 85 90 95
 Glu Ser Ala Phe Asp Tyr Leu Leu Lys Pro Tyr Asp Ile Glu Glu Leu
 100 105 110
 Asn Leu Ile Ile Glu Arg Tyr Arg Lys Thr Met Ala Ser Ala Arg Pro
 115 120 125
 Leu Pro Ser Phe Ala Ser Ala Val Gly Thr Leu Met Pro Gly Arg Asp
 130 135 140
 Leu Phe Met Ile Ser Thr Val Thr Gly Phe Arg Phe Leu Arg Leu Glu
 145 150 155 160
 Glu Ile Gly Tyr Phe Glu Tyr Leu Lys Asp Lys Arg Leu Trp Gln Val
 165 170 175
 Glu Leu Phe Asn Gln Thr Lys Leu Cys Leu Lys Lys Asn Thr Thr Ala
 180 185 190
 Gly Asp Ile Ile Gly Tyr Ser Asp Val Phe Val Gln Ile Ser Gln Ser
 195 200 205
 Ala Ile Ile Asn Ile Asn Tyr Leu Ala Met Ile Lys Ser Lys Gln Cys
 210 215 220
 Leu Leu Tyr Pro Pro Phe Ser Asp Lys Glu Asp Leu Ile Ile Ser Arg
 225 230 235 240
 Gly Phe Leu Lys Glu Leu Gln Glu Arg Phe Cys Ile Ile
 245 250

<210> 7746
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 7746
 Glu His Pro Tyr Lys Pro His Phe Thr Phe Cys Ser Ser Arg Pro Ala
 1 5 10 15
 Pro Gly Met His Leu Leu Tyr Ala Gly Asp Val Ala Ala Val Thr Phe
 20 25 30
 Leu Ile Ser Leu Tyr Phe Leu Phe Lys Ser Tyr Gln Gln Pro Arg Pro

35	40	45
Ala Gly Tyr Leu Phe His Ser Phe Ala Leu Leu Ser Ala Gly Ser Val		
50	55	60
Ala Phe Pro Gln Leu Thr Tyr Phe Ile Pro Ile Trp Leu Met Gly Ala		
65	70	75
Ser Gly Phe Gln Ser Leu Thr Phe Arg Ser Phe Cys Gly Ala Ile Ile		80
	85	90
Gly Trp Ser Ile Pro Tyr Trp Phe Leu Leu Gly His Ala Phe Phe His		95
	100	105
Asn Glu Ile Glu Leu Phe Tyr Gln Pro Phe Ile His Leu Ala Asp Phe		110
	115	120
Arg Asp Ile Asp Phe Gly Arg Asp Phe Gln Leu Trp Glu Val Val Thr		125
	130	135
Leu Gly Tyr Leu Phe Ile Leu Tyr Ile Val Ser Ser Ile His Cys Ile		140
	145	150
Val Ala Gly Tyr Glu Asp Lys Ile Arg Thr Arg Ala Tyr Leu His Phe		155
	165	170
Leu Ile Phe Leu Asn Phe Cys Ile Phe Leu Phe Ile Val Leu Gln Pro		175
	180	185
Ala Leu Ser Met Asn Leu Leu Ser Leu Leu Leu Ile Gly Ile Ser Ile		190
	195	200
Leu Val Gly His Leu Phe Val Leu Thr Asn Ser Lys Ser Ser Asn Leu		205
	210	215
Phe Phe Ile Gly Ser Met Ile Thr Leu Ile Ala Leu Phe Cys Phe Asn		220
	225	230
Ile Trp Thr Leu Leu		235
	245	240

<210> 7747

<211> 1119

<212> PRT

<213> B.fragilis

<400> 7747

Met Lys Gln Tyr Lys Thr Val Asn Asn Leu Val Gly Trp Ile Thr Phe		
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Leu Ile Ala Ala Thr Val Tyr Cys Met Thr Ile Glu Pro Thr Ala Ser		15
	20	25
Phe Trp Asp Cys Pro Glu Phe Ile Thr Thr Ala Tyr Lys Leu Glu Val		30
	35	40
Gly His Pro Pro Gly Ala Pro Phe Phe Met Leu Thr Ala Asn Leu Phe		45
	50	55
Thr Gln Phe Val Ser Asp Pro Ala Leu Val Ala Lys Met Val Asn Tyr		60
	65	70
Met Ser Ala Leu Met Ser Gly Ala Cys Ile Leu Phe Leu Phe Trp Ser		75
	85	90
Ile Thr His Leu Val Arg Lys Leu Val Ile Thr Asp Glu Thr Asn Ile		95
	100	105
Thr Arg Gly Gln Leu Ile Thr Val Met Gly Ser Gly Leu Val Gly Ala		110
	115	120
Leu Ala Tyr Thr Phe Ser Asp Thr Phe Trp Phe Ser Ala Val Glu Gly		125
	130	135
Glu Val Tyr Ala Tyr Ser Met Phe Thr Ala Ile Val Phe Trp Leu		140
	145	150
Ile Leu Lys Trp Glu Asp Val Ala Asp Gln Pro His Ser Asp Arg Trp		155
	165	170
Ile Ile Leu Ile Ala Tyr Leu Thr Gly Leu Ser Ile Gly Val His Leu		175
	180	185
Leu Asn Leu Leu Cys Leu Pro Ala Ile Val Leu Val Tyr Tyr Tyr Lys		190

	195		200		205										
Lys	Val	Pro	Gly	Ala	Asn	Ala	Lys	Gly	Ser	Leu	Leu	Ala	Leu	Ala	Gly
	210					215					220				
Ser	Met	Val	Leu	Val	Ala	Ala	Val	Leu	Tyr	Gly	Ile	Val	Pro	Gly	Val
225					230					235					240
Val	Lys	Val	Gly	Gly	Trp	Phe	Glu	Leu	Leu	Phe	Val	Asn	Ser	Leu	Gly
			245						250					255	
Met	Pro	Phe	Asn	Thr	Gly	Val	Ile	Val	Tyr	Val	Ala	Leu	Leu	Ala	Ala
			260					265					270		
Ala	Ile	Ile	Trp	Gly	Ile	Tyr	Glu	Ser	Tyr	Asn	Glu	Lys	Ser	Arg	Thr
		275					280					285			
Arg	Met	Asn	Leu	Ser	Phe	Leu	Leu	Thr	Ile	Ala	Met	Leu	Gly	Ile	Pro
	290					295					300				
Phe	Tyr	Gly	His	Gly	Ala	Ser	Ala	Val	Ile	Ile	Gly	Ile	Leu	Val	Leu
305					310					315					320
Gly	Val	Leu	Ala	Ala	Tyr	Leu	Phe	Ala	Ser	Lys	Leu	Asn	Glu	Lys	Ile
			325					330						335	
Arg	Met	Ser	Ala	Arg	Thr	Met	Asn	Thr	Ala	Leu	Leu	Cys	Thr	Met	Met
			340					345					350		
Ile	Met	Val	Gly	Tyr	Ser	Ser	Tyr	Ala	Leu	Ile	Val	Ile	Arg	Ser	Val
	355						360					365			
Ala	Asn	Thr	Pro	Met	Asp	Gln	Asn	Ser	Pro	Glu	Asp	Ile	Phe	Thr	Leu
	370					375					380				
Gly	Glu	Tyr	Leu	Gly	Arg	Glu	Gln	Tyr	Gly	Thr	Arg	Pro	Leu	Phe	Tyr
385					390					395					400
Gly	Pro	Ala	Tyr	Ser	Ser	Lys	Val	Ala	Leu	Asp	Val	Glu	Asp	Gly	Tyr
			405					410						415	
Cys	Val	Pro	Arg	Gln	Lys	Ser	Thr	Asp	Thr	Lys	Tyr	Val	Arg	Lys	Glu
			420					425					430		
Lys	Thr	Ser	Pro	Asp	Glu	Lys	Asp	Ser	Tyr	Val	Glu	Leu	Pro	Gly	Arg
		435					440					445			
Val	Glu	Tyr	Glu	Tyr	Ala	Gln	Asn	Met	Leu	Phe	Pro	Arg	Met	Tyr	Ser
	450					455					460				
Ser	Ala	His	Thr	Ala	Tyr	Tyr	Lys	Ser	Trp	Gln	Asp	Ile	Thr	Gly	Tyr
465					470					475					480
Asp	Val	Pro	Tyr	Asp	Gln	Cys	Gly	Glu	Met	Leu	Met	Val	Asn	Met	Pro
			485					490						495	
Thr	Gln	Trp	Asp	Asn	Ile	Lys	Phe	Phe	Phe	Ser	Tyr	Gln	Leu	Asn	Phe
		500						505					510		
Met	Tyr	Trp	Arg	Tyr	Phe	Met	Trp	Asn	Phe	Ala	Gly	Arg	Gln	Asn	Asp
		515					520					525			
Ile	Gln	Ser	Ser	Gly	Glu	Ile	Glu	His	Gly	Asn	Trp	Ile	Thr	Gly	Ile
	530					535					540				
Pro	Phe	Ile	Asp	Asn	Leu	Leu	Tyr	Gly	Asp	Gln	Asn	Met	Leu	Pro	Gln
545					550				555						560
Glu	Leu	Lys	Asp	Asn	Lys	Gly	His	Asn	Val	Phe	Tyr	Cys	Leu	Pro	Leu
			565					570						575	
Ile	Leu	Gly	Ile	Ile	Gly	Leu	Phe	Trp	Gln	Ala	Trp	Arg	Gly	Gln	Lys
		580						585					590		
Gly	Ile	Gln	Gln	Phe	Trp	Val	Val	Phe	Phe	Leu	Phe	Phe	Met	Thr	Gly
	595						600					605			
Ile	Ala	Ile	Val	Leu	Tyr	Leu	Asn	Gln	Thr	Pro	Gly	Gln	Pro	Arg	Glu
	610					615					620				
Arg	Asp	Tyr	Ala	Tyr	Ala	Gly	Ser	Phe	Tyr	Ala	Phe	Ala	Ile	Trp	Ile
625					630					635					640
Gly	Met	Gly	Val	Ala	Gly	Ile	Val	His	Leu	Leu	Arg	Asn	Tyr	Met	Lys
			645					650						655	
Glu	Val	Pro	Ala	Ala	Ala	Leu	Thr	Ser	Ala	Val	Cys	Leu	Leu	Val	Pro
		660						665					670		

195 200 205
 210 215 220
 225 230 235
 240 245 250
 255 260 265
 270 275 280
 285 290 295
 300 305 310
 315 320 325
 330 335 340
 345 350 355
 360 365 370
 375 380 385
 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 480 485 490
 495 500 505
 510 515 520
 525 530 535
 540 545 550
 555 560 565
 570 575 580
 585 590 595
 600 605 610
 615 620 625
 630 635 640
 645 650 655
 660 665 670

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Ile Gln Met Ala Ser Gln Thr Trp Asp Asp His Asp Arg Ser Gly Arg
675                               680           685
Tyr Val Ala Arg Asp Phe Gly Gln Asn Tyr Leu Met Ser Leu Gln Glu
690                               695           700
Ser Gly Asn Pro Ile Ile Tyr Thr Asn Gly Asp Asn Asp Thr Phe Pro
705                               710           715           720
Leu Trp Tyr Asn Gln Glu Thr Glu Ser Phe Arg Thr Asp Ala Arg Thr
725                               730           735
Cys Asn Leu Ser Tyr Leu Gln Thr Asp Trp Tyr Ile Asp Gln Met Lys
740                               745           750
Arg Pro Ala Tyr Asp Ser Pro Ala Leu Pro Ile Thr Trp Asp Arg Thr
755                               760           765
Glu Tyr Met Glu Gly Gln Asn Glu Tyr Val Pro Ile Arg Pro Asp Phe
770                               775           780
Lys Lys Gln Ile Asp Lys Ala Tyr Lys Ala Ala Glu Glu Glu Val Leu
785                               790           795           800
Asn Gly Lys Asn Pro Glu Ala Leu Asn Asn Ile Arg Ala Gln Phe Gly
805                               810           815
Asp Asn Pro Tyr Glu Leu Lys Asn Ile Leu Lys Tyr Trp Val Arg Thr
820                               825           830
Lys Asp Gly Gln Ala Val Ile Pro Thr Asp Ser Ile Val Val Lys Ile
835                               840           845
Asp Lys Glu Ala Val Arg Arg Ser Gly Met Met Ile Pro Glu Ala Leu
850                               855           860
Gly Asp Ser Ile Pro Asp Tyr Met His Ile Ser Leu Lys Asp Glu Lys
865                               870           875           880
Gly Asn Pro Lys Arg Ala Leu Tyr Lys Ser Glu Leu Met Met Leu Glu
885                               890           895
Met Leu Ala Asn Ala Asn Trp Glu Arg Pro Ile Tyr Met Ala Ile Thr
900                               905           910
Val Gly Thr Asp Asn Gln Leu Asn Met Arg Glu His Phe Ile Gln Glu
915                               920           925
Gly Leu Thr Tyr Arg Phe Thr Pro Phe Asp Thr Glu Ala Leu Gly Ala
930                               935           940
Thr Ile Asp Ser Glu Lys Met Tyr Asp Asn Leu Met Asn Lys Phe Lys
945                               950           955           960
Phe Gly Gly Ile Asp Lys Pro Gly Ile Tyr Ile Asp Glu Asn Thr Met
965                               970           975
Arg Met Cys Tyr Thr His Arg Arg Ile Phe Ala Gln Leu Ile Thr Gln
980                               985           990
Leu Met Lys Glu Gly Lys Lys Asp Lys Ala Leu Ala Ala Leu Glu Tyr
995                               1000          1005
Ala Glu Lys Met Ile Pro Ala Phe Asn Val Pro Tyr Asp Val Gln Asn
1010                              1015          1020
Gly Ala Leu Glu Met Ala Glu Ala Tyr Tyr Gln Leu Gly Asn Asn Thr
1025                              1030          1035           1040
Lys Ala Asp Gln Ile Ile Asp Glu Leu Ala Asn Lys Ser Val Glu Tyr
1045                              1050          1055
Leu Thr Trp Tyr Leu Ser Leu Asp Asp Asn His Leu Leu Met Ser Gln
1060                              1065          1070
Arg Glu Phe Ile Met His Leu Ser Ala Leu Asp Met Glu Val Lys Met
1075                              1080          1085
Met Glu Lys Tyr Lys Ser Lys Leu Ala Gly Asn Tyr Thr Pro Lys Val
1090                              1095          1100
Asn Glu Leu Tyr Asn Ile Tyr Val Gly Arg Met Lys Ala His Gln
1105                              1110          1115

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<210> 7748

<211> 305

<212> PRT

<213> B.fragilis

<400> 7748

Ser Asp Ile His Ser Pro Arg Ile Tyr Glu Glu Gln Cys Met Ala Asp
 1 5 10 15
 His Gly Phe Asn Val Arg Arg Lys Thr Asp Thr Leu His His Pro Ala
 20 25 30
 Glu Ser His Ala Gly Ser Pro Glu Pro Gly Tyr Val Lys Lys Asn Met
 35 40 45
 Glu Arg Ile Ile Glu Tyr Thr Ala Asp Gly Ser Ala Thr Leu Phe Val
 50 55 60
 Pro Glu Leu Asn Glu His Tyr His Ser Val Lys Gly Ala Leu Thr Glu
 65 70 75 80
 Ser Ser His Ile Phe Ile Asp Met Gly Leu Lys Ala Ser Ala Ser Pro
 85 90 95
 Ala Pro His Ile Leu Glu Ile Gly Phe Gly Thr Gly Leu Asn Ala Leu
 100 105 110
 Leu Thr Leu Ile Glu Ala Glu Arg Ser Gly Arg Gln Ile His Tyr Thr
 115 120 125
 Gly Ile Glu Leu Tyr Pro Leu Pro Trp Glu Thr Val Glu Lys Leu Arg
 130 135 140
 Tyr Asn Asp Arg Pro Gly Gly Asp Gly Glu Gln Arg Leu Thr Thr Gly
 145 150 155 160
 Asp Glu Gln Ala Ala Gln Trp Met Lys Ala Leu His Thr Ser Pro Trp
 165 170 175
 Gly Glu Asp Val Arg Ile Thr Pro His Phe Thr Leu Arg Lys Ile Gln
 180 185 190
 Gly Asp Phe Thr Ile Met Asp Arg Ser Ser Leu Ile Thr Asp Arg Thr
 195 200 205
 Ser Leu Phe Ser Leu Leu Tyr Phe Asp Ala Phe Ala Pro Glu Lys Gln
 210 215 220
 Pro Glu Met Trp Thr Gln Glu Leu Phe Asp Glu Leu Tyr Val Met Met
 225 230 235 240
 Glu Glu Glu Gly Ile Leu Thr Thr Tyr Cys Ala Lys Gly Val Val Arg
 245 250 255
 Arg Met Leu Gln Ala Ala Gly Phe Ile Val Glu Arg Leu Pro Gly Pro
 260 265 270
 Pro Gly Gly Lys Arg Glu Ile Leu Arg Ala Lys Lys Arg Ser Gln Asp
 275 280 285
 Ser Pro Ala Val Thr Gln Cys Asn Ala Gln Pro Thr Leu Lys Gln Lys
 290 295 300
 Gly
 305

<210> 7749

<211> 323

<212> PRT

<213> B.fragilis

<400> 7749

Arg Ala Thr His Ile Lys Thr Glu Arg Ile Asn Ile Met Arg Met Asn
 1 5 10 15
 Arg Ile His Gln Ser Ile Val Thr His Ile Pro Gly Arg Gly Met Arg
 20 25 30
 Gly Gln Thr Val Leu Phe Leu Phe Leu Leu Leu Ser Ala Cys Ser
 35 40 45
 Gly Arg Gly Lys Gly Asp Ala Gly Glu Arg Ile Ile Thr Val Thr Met
 50 55 60

Glu Pro Gln Arg Tyr Phe Thr Glu Ala Ile Ala Gly Asp Lys Phe Thr
 65 70 75 80
 Val Arg Ser Met Val Pro Lys Gly Ser Ser Pro Glu Thr Tyr Asp Pro
 85 90 95
 Thr Pro Gln Gln Leu Val Ser Leu Gly Glu Ser Glu Ala Tyr Leu Arg
 100 105 110
 Ile Gly Tyr Ile Gly Phe Glu Arg Ser Trp Met Asp Arg Leu Met Asn
 115 120 125
 Asn Thr Pro His Ile Gln Val Phe Asp Thr Ser Thr Gly Val Asp Leu
 130 135 140
 Ile Phe Glu Ser Ala Phe Asp His Gly Asp His Arg His Glu Gly Gly
 145 150 155 160
 Val Glu Pro His Ile Trp Asn Ser Thr Ala Asn Ala Leu Ile Ile Ala
 165 170 175
 Gly Asn Thr Phe Lys Ala Leu Thr Val Leu Asp Lys Gly Asn Glu Ala
 180 185 190
 Tyr Tyr Lys Ala Arg Tyr Asp Ser Leu Cys Gln Arg Ile Glu Gln Thr
 195 200 205
 Asp Ser Leu Ile Arg Gln Thr Leu Ser Val Pro Gly Ala Asp Arg Ala
 210 215 220
 Phe Ile Ile Tyr His Pro Ala Leu Ser Tyr Phe Ala Arg Asp Tyr Gly
 225 230 235 240
 Leu His Gln Ile Ser Ile Glu Glu Gly Gly Lys Glu Pro Ser Pro Ala
 245 250 255
 His Leu Lys Gly Leu Met Asp Leu Cys Lys Lys Glu Gly Val Arg Val
 260 265 270
 Ile Phe Val Gln Pro Glu Phe Asp Arg Arg Asn Ala Glu Ile Ile Ala
 275 280 285
 Lys Gln Thr Gly Thr Arg Val Ile Ser Ile Asn Pro Leu Ser Tyr Asp
 290 295 300
 Trp Glu Glu Glu Met Leu Asn Val Ala Arg Ser Leu Arg Gly Glu Pro
 305 310 315 320
 Gly Tyr Gln

<210> 7750

<211> 243

<212> PRT

<213> B.fragilis

<400> 7750

Gln Arg Ile Lys Ile Asn Lys Ser Met Ala Glu Gln Ala Leu Phe Gln
 1 5 10 15
 Pro Phe Asn Arg Asn Gln Gln Arg Glu Asn Leu Glu Asn Thr Lys Glu
 20 25 30
 Thr Gly Leu Leu Ile Ser Leu Ile Pro Ser Leu Gln Glu Asp Phe Tyr
 35 40 45
 Val Asp Ser Leu Thr Thr Gly Ala Ser Lys Glu Thr Leu Ser Lys Leu
 50 55 60
 Leu Leu Arg Asn Pro Gly Ile Lys Asn Glu Thr Ala Val Ile Glu Met
 65 70 75 80
 Ile His Phe Leu His Asp Glu Gly Asp Arg Ile Ser Phe Ser Ile Leu
 85 90 95
 Leu Pro Phe Leu Val Ala Glu Tyr Asp Pro Lys Glu Leu Glu Glu Lys
 100 105 110
 Ile Arg Glu Arg Phe Phe Gly Ile Glu Leu Phe Ile Arg Lys Cys Asn
 115 120 125
 Asn Leu His His Phe Ile Thr Cys Ile Lys Ala Asp Gln Thr Ile Lys
 130 135 140

CCDS: B00001

Ile Gly Glu Glu Glu Leu Lys Arg Gly Val Leu Ala Trp Asp Met Gly
 145 150 155 160
 Arg Met Val Cys Leu Thr Arg Ile Ala Tyr Asp Ala Gly Phe Ile Asp
 165 170 175
 Glu Ser Leu Ala Trp Asn Tyr Ile Cys Ser Ala Gly Gln Gln Cys Ile
 180 185 190
 Gln Ala Phe Asn Asp Trp Thr Glu Val Gly Lys Ser Phe Leu Leu Gly
 195 200 205
 Gln Ala Met Glu Ala Thr Glu Lys Arg Lys Gln Glu Leu Tyr Ile Arg
 210 215 220
 Leu Tyr Arg Gln Ala Thr Glu Asn Pro Asn Ser Pro Trp Lys Lys Arg
 225 230 235 240
 Thr Leu Lys

<210> 7751
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 7751

Pro Asn Tyr Lys Glu Glu Ile Val Met Lys Ala Asp Asn Arg Asn Ile
 1 5 10 15
 Phe Ala Ile Lys Ala Phe Leu Arg Glu Tyr Leu Asp Leu Arg Lys Asp
 20 25 30
 Lys Asp Asn Glu Leu Ala Thr Val Asp Ser Ile Arg Lys Gly Val Glu
 35 40 45
 Phe Lys Gly Ala Asn Leu Trp Ile Leu Ile Phe Ala Ile Phe Met Ala
 50 55 60
 Ser Leu Gly Leu Asn Val Asn Ser Thr Ala Val Ile Ile Gly Ala Met
 65 70 75 80
 Leu Ile Ser Pro Leu Met Gly Pro Ile Met Gly Ala Gly Leu Ser Val
 85 90 95
 Gly Met Asn Asp Phe Glu Leu Met Lys Arg Ser Leu Lys Ser Phe Leu
 100 105 110
 Ile Thr Thr Ala Phe Ser Val Thr Thr Ala Thr Val Phe Phe Leu Phe
 115 120 125
 Thr Pro Ile Ala Glu Ala Gln Ser Glu Leu Leu Ala Arg Thr Ser Pro
 130 135 140
 Thr Ile Tyr Asp Val Phe Ile Ala Leu Phe Gly Gly Leu Ala Gly Val
 145 150 155 160
 Val Ala Leu Ser Thr Lys Glu Lys Gly Asn Val Ile Pro Gly Val Ala
 165 170 175
 Ile Ala Thr Ala Leu Met Pro Pro Leu Cys Thr Ala Gly Tyr Gly Leu
 180 185 190
 Ala Ser Gly Asn Leu Ile Tyr Phe Leu Gly Ala Phe Tyr Leu Tyr Phe
 195 200 205
 Ile Asn Ser Val Phe Ile Ser Leu Ala Thr Phe Ile Gly Val Arg Leu
 210 215 220
 Met His Phe Gln Arg Lys Glu Phe Val Asp Lys Asn Arg Glu Lys Lys
 225 230 235 240
 Val Arg Lys Tyr Ile Val Leu Ile Val Ile Leu Thr Met Cys Pro Ala
 245 250 255
 Ile Tyr Leu Thr Met Gly Ile Ile Arg Ser Thr Phe Phe Glu Ala Ala
 260 265 270
 Ala Asn Arg Phe Val Ser Glu Gln Leu Asn Phe Asp Asn Thr Gln Val
 275 280 285
 Leu Asn Lys Lys Ile
 290

<210> 7752
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 7752

Lys	Ser	Asn	Asn	Met	Ala	Ile	Thr	Tyr	Gln	Thr	Glu	Gly	Ile	Lys	Met
1				5					10					15	
Pro	Asp	Ile	Lys	Lys	Arg	Glu	Thr	Thr	Glu	Trp	Ile	Lys	Ala	Val	Ala
			20					25					30		
Ala	Thr	Tyr	Glu	Lys	Arg	Ile	Gly	Glu	Ile	Ala	Tyr	Ile	Phe	Cys	Ser
		35					40					45			
Asp	Glu	Lys	Ile	Leu	Glu	Val	Asn	Arg	Gln	Tyr	Leu	Gln	His	Asp	Tyr
	50					55					60				
Tyr	Thr	Asp	Ile	Ile	Thr	Phe	Asp	Tyr	Cys	Glu	Gly	Asn	Arg	Leu	Ser
65					70					75				80	
Gly	Asp	Leu	Phe	Ile	Ser	Leu	Glu	Thr	Val	Lys	Thr	Asn	Ser	Glu	Gln
			85						90					95	
Phe	Asn	Thr	Pro	Tyr	Glu	Glu	Glu	Leu	His	Arg	Thr	Ile	Ile	His	Gly
			100					105						110	
Ile	Leu	His	Leu	Cys	Gly	Ile	Asn	Asp	Lys	Gly	Pro	Gly	Glu	Arg	Glu
		115					120					125			
Ile	Met	Glu	Ala	Ala	Glu	Asn	Lys	Ala	Leu	Ala	Met	Arg	Lys	Gln	
	130					135					140				

<210> 7753
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 7753

Ile	Met	Ile	Lys	Gln	Ile	Met	Lys	Thr	Asn	Ser	Lys	Gln	Lys	Ser	Ala
1				5					10					15	
Leu	Leu	Val	Met	Leu	Leu	Ser	Leu	Leu	Ile	Pro	Asn	Ile	Met	Ala	Gln
			20					25					30		
Glu	Pro	Lys	Ile	Pro	Thr	Leu	Glu	Asp	Leu	Ile	Pro	Gly	Gly	Ala	Thr
		35					40					45			
Tyr	Arg	Ser	Ala	Glu	Asn	Ile	Ser	Gly	Leu	Gln	Trp	Trp	Gly	Asp	Gln
	50					55					60				
Cys	Ile	Lys	Pro	Gly	Ile	Glu	Ala	Val	Phe	Met	Ile	Asn	Pro	Lys	Asn
65					70				75					80	
Gly	Lys	Glu	Thr	Pro	Leu	Thr	Thr	Arg	Asn	Ile	Val	Asn	Lys	Ala	Leu
			85						90					95	
Glu	Ala	Gly	Asn	His	Gly	Lys	Leu	Gln	His	Phe	Tyr	Asn	Ala	Ser	Phe
			100					105						110	
Pro	Trp	Pro	Lys	Lys	Thr	Leu	Cys								
		115				120									

<210> 7754
 <211> 409
 <212> PRT
 <213> B.fragilis

<400> 7754

Tyr	Glu	Met	Lys	Glu	Ile	Phe	Lys	Leu	Ile	Leu	Leu	Leu	Val	Ile	Leu
1				5					10					15	
Ser	Gly	Cys	Ile	Glu	Asn	Asp	Glu	Glu	Ile	Ile	Leu	Asn	Asn	Ser	Asp
			20					25					30		

Leu Glu Asp Val Ser Glu Tyr Lys Arg Ala Glu Asp Leu Ile Cys Gln
 35 40 45
 Phe Ser Glu Arg Ile Asp Lys Glu Lys Gly Gly Thr Arg Ser Ser Thr
 50 55 60
 Ser Gln Ile Ile Leu Ser Leu Ala Gly Lys Lys Ser Val Val Ile Pro
 65 70 75 80
 Lys Ile Ala Thr Arg Thr Gly Glu Ile Ser Thr Asp Ser Val Asn Met
 85 90 95
 Phe Ile Phe Asp Thr Glu Lys Asp Gly Arg Phe Gly Phe Ala Ile Ala
 100 105 110
 Thr Gly Lys Ala Glu Val Gly Arg Val Tyr Ala Tyr Val Glu Asn Gly
 115 120 125
 Ile Leu Ser Asp Thr Ile Glu Asn Glu Gly Met Ala Tyr Leu Val Ser
 130 135 140
 Gln Ile Pro Asp Ile Ile Lys Gln Asp Gln Leu Asn Pro Asn Leu Thr
 145 150 155 160
 Arg Ser Gly Glu Gln Arg Thr Thr His Val Ser Ile Pro Leu Val Lys
 165 170 175
 Thr Glu Trp Asn Gln His Tyr Pro Tyr Asn Ala Gln Met Pro Thr Asn
 180 185 190
 Gly Lys Cys Ser Ile Ser Tyr Tyr Tyr Ala Gly Cys Ile Pro Ile Ala
 195 200 205
 Val Ala Gln Ala Ile Thr Tyr Tyr Arg Lys Cys Pro Val Ala Tyr Asp
 210 215 220
 Trp Asp Ala Phe Thr Val Asn Thr Gly Ile Tyr Asp Thr Asn Leu Ile
 225 230 235 240
 Ala Pro Val Ser Gln Phe Val Lys Lys Val Ala Asp Gly Ile Lys Val
 245 250 255
 Gly Tyr Lys Cys Asp Gly Thr Gly Ala Lys Asn Leu Gly Ser Thr Asn
 260 265 270
 Asp Phe Leu Lys Gly Trp Gly Tyr Asn Val Glu Arg His Lys Thr Asn
 275 280 285
 Asp Val Asp Lys Asn Leu Leu Tyr Lys Cys Leu Ile Thr Lys Asn Val
 290 295 300
 Val Ile Phe Gly Gly Lys Lys Lys Ser Thr Gly His Val Trp Leu
 305 310 315 320
 Val Asp Gly Gly Val Phe Glu Tyr Ser Gly Asn Met Met Ile Gly Cys
 325 330 335
 Thr Asn Ile Gln Val Lys Ala Ile His Cys Asn Phe Gly Trp Asn Arg
 340 345 350
 Ala Asn Asn Gly Trp Tyr Ala Ile Lys Asp Gly Ala Tyr Asn Arg Pro
 355 360 365
 Ala Asn Ser Ala Ser Gln Asp Gly Asn Asn Pro Thr Asn Asp Lys Asn
 370 375 380
 Ser Pro Asn Gly Asn Phe Tyr Thr Glu Asn Asp Tyr Ile Tyr Phe His
 385 390 395 400
 Glu Ala Met Gly Thr Glu Ile Leu Trp
 405

<210> 7755

<211> 405

<212> PRT

<213> B.fragilis

<400> 7755

Phe Val His Leu Arg Gly Ile Val Thr Gly Glu Phe Arg Leu Ile Phe
 1 5 10 15
 Leu His His Phe Asp Phe His Ile Gln Cys Ala Glu Val His Asp Lys
 20 25 30

Phe Thr Leu Arg His Glu Gln Met Ile Val Val Gln Ala Glu Val Pro
 35 40 45
 Gly Glu Val Phe Tyr Arg Leu Val Cys Gln Phe Ile Asp Asn Leu Val
 50 55 60
 Gly Phe Arg Ile Val Ser Gln Leu Val Val Ser Phe Cys His Phe Glu
 65 70 75 80
 Cys Ser Val Leu Tyr Ile Val Gly His Val Glu Ser Arg Asn His Leu
 85 90 95
 Phe Gly Val Phe Gln Cys Cys Gln Arg Phe Val Leu Phe Ala Phe Phe
 100 105 110
 His Gln Leu Gly Asp Gln Leu Gly Lys Asp Ala Ala Met Gly Val Ala
 115 120 125
 His Ala His Arg Ile Leu Val Asp Val Asp Ala Gly Phe Val Asp Ala
 130 135 140
 Ser Glu Leu Glu Leu Val His Gln Val Val Ile His Leu Phe Thr Val
 145 150 155 160
 Asp Gly Gly Ser Glu Ser Phe Arg Ile Glu Arg Cys Glu Ala Val Cys
 165 170 175
 Gln Thr Leu Leu Asn Glu Met Leu Ala His Val Gln Leu Ile Val Arg
 180 185 190
 Thr Asp Gly Asp Gly His Val Asn Gly Ala Phe Pro Val Gly Ile Gly
 195 200 205
 Gln His Phe Glu His His Gln Leu Ala Leu Val Glu Ser Pro Phe Arg
 210 215 220
 Val Thr Leu Phe Val Phe Glu Arg Tyr Val His Val Val Gly Asp Gly
 225 230 235 240
 Val Thr Gln Cys Leu Arg Asn His His Thr Arg Thr Ala Asn Gly Phe
 245 250 255
 Phe Val Asp Phe Asp Asn Asp Ala Val Gly Arg Tyr His Cys Leu Ser
 260 265 270
 Val Phe Gly Ala Tyr Pro Ile Phe Gln Asp Val Leu Gln Leu Val Arg
 275 280 285
 Ile Ile Ala Glu Leu Gly Thr Asp Val Val Gln Cys Phe Arg Ile Leu
 290 295 300
 Ala Val Gln His Leu Phe Phe Gly Gly Phe Val Gly Phe Val Asp Leu
 305 310 315 320
 Leu Leu Glu Val Arg Thr Asp Gly Asp Val Phe Val Leu Thr Phe His
 325 330 335
 Val Phe Arg Ser Val Pro Ser Asp Gly Gln Cys Arg Arg Val Val Gly
 340 345 350
 Arg Thr Phe His Leu Val Asp Val Pro Val Gly Leu Glu Val Ala Gln
 355 360 365
 Val Thr Gly Thr Cys Val Gly Ala Glu Ala Phe Gly Phe Leu Val Val
 370 375 380
 Pro Gln Arg Glu Gly Ile Val Ile Thr Val Gly Ile Asp Asp Arg Val
 385 390 395 400
 Ala Ala Phe Leu Lys
 405

<210> 7756

<211> 140

<212> PRT

<213> B.fragilis

<400> 7756

Gln Phe Lys Asp Leu Lys Thr Asp Ile Met Lys Thr Thr Gly Phe Leu
 1 5 10 15
 Lys Thr Val Ala Leu Ser Ala Val Leu Leu Val Ser Ser Val Ala Val
 20 25 30

Ser Ala Arg Asn Tyr Asp Asn Asn Leu Ile Tyr Asn Ser Glu Glu Glu
 35 40 45
 Asn Gly Met Leu Ile Gly Gln Thr Val Tyr Lys Lys Glu Gly Ser Ser
 50 55 60
 Leu Ala Asn Tyr Met Lys Tyr Asn Tyr Lys Tyr Asp Asp Asn Lys Arg
 65 70 75 80
 Met Ile Glu Ser Gln Thr Met Lys Trp Asn Ser Tyr Lys Asn Asn Trp
 85 90 95
 Glu Asn Asp Leu Leu Val Arg Tyr Thr Tyr Glu Gly Lys Thr Ile Thr
 100 105 110
 Thr Asn Tyr Tyr Lys Trp Asn Asn Arg Lys Ser Glu Phe Ile Leu Ala
 115 120 125
 Pro Glu Met Thr Val Thr Met Asp Asn Pro Asn Leu
 130 135 140

<210> 7757

<211> 302

<212> PRT

<213> B.fragilis

<400> 7757

Val Asn Met Glu Met Asn Asp Thr Pro Gln Asp Lys Tyr Leu Thr Ala
 1 5 10 15
 Leu Ala Lys Tyr Asp Thr Gln Leu Asn Asp Ala Asp Val Gln Val Gln
 20 25 30
 Val Ala Ala Leu Ile Glu Lys Lys Val Pro Glu Asn Asn Thr Glu Glu
 35 40 45
 Val Lys Lys Phe Leu Phe Asn Cys Ile Asp Leu Thr Thr Leu Asn Thr
 50 55 60
 Thr Asp Ser Asp Glu Ser Val Met Arg Phe Thr Glu Lys Val Asn Arg
 65 70 75 80
 Phe Asp Asp Glu Phe Pro Asp Leu Lys Asn Val Ala Ala Ile Cys Val
 85 90 95
 Tyr Pro Asn Phe Ala Gln Val Val Lys Asp Thr Leu Glu Val Glu Gly
 100 105 110
 Ile Asn Ile Ala Cys Val Ser Gly Gly Phe Pro Ser Ser Gln Thr Phe
 115 120 125
 Thr Glu Val Lys Ile Ala Glu Thr Ala Met Ala Leu Ala Asp Gly Ala
 130 135 140
 Asp Glu Ile Asp Ile Val Ile Pro Val Gly Ala Phe Leu Ser Gly Asp
 145 150 155 160
 Tyr Glu Thr Met Cys Glu Glu Ile Met Glu Leu Lys Glu Thr Cys Lys
 165 170 175
 Glu His His Leu Lys Val Ile Leu Glu Thr Gly Ala Leu Lys Thr Ala
 180 185 190
 Ser Asn Ile Lys Lys Ala Ser Ile Leu Ser Met Tyr Ser Gly Ala Asp
 195 200 205
 Phe Ile Lys Thr Ser Thr Gly Lys Gln Gln Pro Ala Ala Thr Pro Glu
 210 215 220
 Ala Ala Tyr Val Met Cys Gln Ala Ile Lys Glu Tyr Tyr Glu Gln Thr
 225 230 235 240
 Gly Asn Lys Val Gly Phe Lys Pro Ala Gly Gly Ile Asn Thr Val Asn
 245 250 255
 Asp Ala Leu Ile Tyr Tyr Thr Ile Val Lys Glu Val Leu Gly Lys Glu
 260 265 270
 Trp Leu Ser Asn Glu Leu Phe Arg Leu Gly Thr Ser Arg Leu Ala Asn
 275 280 285
 Leu Leu Leu Ser Glu Ile Lys Gly Glu Glu Leu Lys Phe Phe
 290 295 300

<210> 7758
 <211> 627
 <212> PRT
 <213> B.fragilis

<400> 7758

Thr	Arg	Arg	Trp	Lys	Pro	Glu	Ile	Thr	Val	Ser	Cys	Asn	Thr	Ser	Thr
1				5					10					15	
Met	Pro	Val	Ser	His	Gly	Gln	Arg	Lys	Pro	Tyr	Ala	Asp	Arg	Pro	Ala
			20					25					30		
Asp	Lys	Tyr	Ile	Val	Tyr	Asp	Phe	Asp	Tyr	Arg	Glu	Val	Ile	Ser	Thr
		35					40					45			
Arg	Pro	Leu	Pro	Lys	Glu	Gly	Ala	Asn	Arg	Asp	Tyr	His	Pro	Glu	Thr
	50					55					60				
Gly	His	Val	Ala	Tyr	Thr	Ile	Gly	Asn	Asn	Leu	Tyr	Val	Asp	Asp	Arg
65					70					75					80
Ala	Val	Thr	Asn	Glu	Pro	Glu	Gly	Ile	Val	Cys	Gly	Gln	Ser	Val	His
				85					90					95	
Arg	Asn	Glu	Phe	Gly	Ile	Lys	Lys	Gly	Thr	Phe	Trp	Ser	Pro	Ser	Gly
			100					105					110		
Asn	Leu	Leu	Ala	Phe	Tyr	Arg	Met	Asp	Gln	Ser	Met	Val	Ala	Gln	Tyr
		115					120					125			
Pro	Leu	Val	Asp	Val	Thr	Ala	Pro	Ile	Ala	Glu	Val	Asn	Asn	Ile	Arg
	130					135					140				
Tyr	Pro	Met	Ala	Gly	Met	Thr	Ser	His	Gln	Val	Lys	Val	Gly	Ile	Tyr
145					150					155					160
Asn	Pro	Ala	Thr	Gly	Lys	Ser	Ile	Tyr	Leu	Asn	Ala	Gly	Asp	Pro	Thr
				165					170					175	
Asp	Arg	Tyr	Phe	Thr	Asn	Ile	Ser	Trp	Ala	Pro	Asp	Glu	Lys	Ser	Leu
			180					185					190		
Tyr	Leu	Ile	Glu	Leu	Asn	Arg	Asp	Gln	Asn	His	Ala	Lys	Leu	Cys	Arg
		195					200				205				
Tyr	Asp	Val	Glu	Thr	Gly	Glu	Leu	Thr	Ala	Thr	Leu	Phe	Glu	Glu	Lys
	210					215					220				
Ser	Asp	Lys	Tyr	Val	Glu	Pro	Gln	Asp	Pro	Ile	Ile	Phe	Leu	Pro	Trp
225					230					235					240
Asp	Asn	Ser	Lys	Phe	Ile	Tyr	Gln	Ser	Gln	Lys	Asp	Gly	Phe	Ser	His
				245					250					255	
Leu	Tyr	Leu	Tyr	Asp	Thr	Asn	Gly	Arg	Gln	Ile	Arg	Gln	Leu	Thr	Glu
			260					265					270		
Gly	Asp	Trp	Leu	Val	Lys	Glu	Val	Leu	Gly	Phe	Asp	Thr	Lys	Lys	Lys
		275					280					285			
Glu	Ile	Ile	Ile	Ala	Ser	Thr	Glu	Phe	Ser	Pro	Leu	Gln	Asn	Asn	Leu
	290					295					300				
Phe	Arg	Leu	Asp	Thr	Lys	Thr	Gly	Thr	Arg	Thr	Pro	Leu	Gly	Ser	Ala
305					310					315					320
Glu	Gly	Val	His	Ser	Gly	Gln	Leu	Ser	Pro	Ser	Gly	Arg	Tyr	Leu	Ile
				325					330					335	
Asp	Gln	Tyr	Asn	Ser	Pro	Thr	Val	Pro	Arg	Ser	Ile	Asn	Ile	Ile	Asp
			340					345					350		
Val	Gln	Ser	Gly	Lys	Ser	Val	Asn	Leu	Leu	Thr	Ala	Ala	Asp	Pro	Phe
		355					360					365			
Thr	Gly	Tyr	Lys	Met	Pro	Gly	Ile	Glu	Thr	Gly	Thr	Ile	Lys	Ala	Ala
	370					375					380				
Asp	Gly	Lys	Thr	Asp	Leu	Tyr	Tyr	Arg	Leu	Ile	Lys	Pro	Ala	Asp	Phe
385					390					395					400
Asp	Pro	Asn	Lys	Lys	Tyr	Pro	Ala	Ile	Val	Tyr	Val	Tyr	Gly	Gly	Pro
				405					410					415	

His Ala Gln Leu Val Thr Asn Gly Trp Gln Asn Gly Ala Arg Gly Trp
 420 425 430
 Asp Ile Tyr Met Ala Asn Lys Gly Tyr Ile Met Phe Thr Val Asp Gly
 435 440 445
 Arg Gly Ser Ser Asn Arg Gly Leu Asp Phe Glu Asn Val Thr Phe Arg
 450 455 460
 Gln Leu Gly Ile Glu Glu Gly Arg Asp Gln Val Lys Gly Thr Glu Phe
 465 470 475 480
 Leu Lys Ser Leu Pro Tyr Val Asp Gly Asn Arg Ile Gly Val His Gly
 485 490 495
 Trp Ser Phe Gly Gly His Met Thr Thr Ala Leu Leu Leu Arg Tyr Pro
 500 505 510
 Glu Ile Phe Lys Val Gly Val Ala Gly Gly Pro Val Ile Asp Trp Gly
 515 520 525
 Tyr Tyr Glu Val Met Tyr Gly Glu Arg Tyr Met Asp Thr Pro Gln Ser
 530 535 540
 Asn Pro Lys Gly Tyr Lys Glu Cys Asn Leu Lys Asn Leu Ala Gly Asn
 545 550 555 560
 Leu Lys Gly His Leu Met Ile Ile His Asp Asp His Asp Asp Thr Cys
 565 570 575
 Val Pro Gln His Thr Leu Ser Phe Met Lys Ala Cys Ile Asp Ala Arg
 580 585 590
 Thr Tyr Pro Asp Leu Phe Ile Tyr Pro Cys His Lys His Asn Val Ser
 595 600 605
 Gly Arg Asp Arg Val His Leu His Glu Lys Ile Thr Arg Tyr Phe Glu
 610 615 620
 Asp Tyr Leu
 625

<210> 7759

<211> 132

<212> PRT

<213> B.fragilis

<400> 7759

Lys Lys Lys Cys Gly Asn Phe Ala Phe Glu Ile Lys Lys His Ile Thr
 1 5 10 15
 Met Lys Thr Lys Met Ile Val Leu Val Gly Met Leu Phe Thr Gln Ile
 20 25 30
 Val Phe Thr Ser Asn Asn Val Tyr Gly Glu Asp Val Met Ala Ile Met
 35 40 45
 Lys Asp Arg His Lys Val His Leu Ile Thr His Lys Glu Ala Asn Leu
 50 55 60
 Gln Arg Ser Thr Leu Leu Val Ala Cys Gly Tyr Ile Glu Glu Ser Gln
 65 70 75 80
 Leu Phe Leu Asn Phe Asn Ser Ser Leu Glu Asn Arg Lys Ile Gln Val
 85 90 95
 Val Asp Ser Glu Thr Gly Gln Thr Val Phe Asp Asp Thr Ile Thr Gly
 100 105 110
 Thr Ser Phe Ser Ile Phe Leu Glu Arg Asp Ser Asp Ser Phe Asp Ile
 115 120 125
 Tyr Ile Gly Arg
 130

<210> 7760

<211> 151

<212> PRT

<213> B.fragilis

<400> 7760

Phe Glu Leu Cys Ile Arg Glu Arg Ser Glu Asn Arg Arg Ile Arg Ser
 1 5 10 15
 Arg His Glu Ser Arg Val Ile Glu Arg Arg Thr Cys Asn Tyr Leu His
 20 25 30
 Arg Tyr Gln Lys Gln Gly Ile Met Thr Leu Glu Glu Ala Gln Lys Ala
 35 40 45
 Val Asp Glu Trp Ile His Lys Tyr Gly Val Arg Tyr Phe Ser Glu Leu
 50 55 60
 Thr Asn Met Ala Val Leu Thr Glu Glu Val Gly Glu Leu Ala Arg Ile
 65 70 75 80
 Met Ala Arg Lys Tyr Gly Asp Gln Ser Phe Lys Glu Gly Glu Lys Asp
 85 90 95
 Asp Ile Ser Asp Glu Ile Thr Asp Val Leu Trp Val Leu Leu Cys Ile
 100 105 110
 Ala Asn Gln Thr Gly Val Asn Leu Thr Glu Ala Phe Ala Arg Asn Leu
 115 120 125
 Glu Lys Lys Thr Gln Arg Asp Asn Lys Arg His Ile Asn Asn Pro Lys
 130 135 140
 Leu Ser Glu His Gly Asn Glu
 145 150

<210> 7761

<211> 377

<212> PRT

<213> B.fragilis

<400> 7761

Val Arg Lys Cys Phe Ala Pro Ser Phe Leu Trp Phe Leu Phe Ile Gly
 1 5 10 15
 Leu Gly Met Gly Cys Val Gly Thr Leu Leu Val Ala Met Thr Met Leu
 20 25 30
 Ala Gln His Pro Val Arg Gln Cys Ala Val Ser Gln Gln Leu Asp Arg
 35 40 45
 Ala Val Glu Val Pro Phe Gln Pro Phe Gly Val Asp Ala Cys Gly Arg
 50 55 60
 Val Ile Val Gln Cys Phe Val His Ala Gly Asp Val Leu Tyr Leu Leu
 65 70 75 80
 Gln His Arg Pro Asp Val Met Ala Asp Glu Asp Asp Gly Ala Val Ala
 85 90 95
 Val Asp Leu Arg Gln Gln Leu Val Glu Ala Gly Phe Glu Ala Leu Val
 100 105 110
 Asp Val Gly Ala Arg Leu Val Glu Asn Lys Gln Leu Arg Val Ala Asp
 115 120 125
 Asp Gly Ser Ser Gln Gln Gly Ala Leu Gln Leu Ser Ala Ala Gln Leu
 130 135 140
 Ser Asp Gly Pro Val Phe Lys Ser Leu Glu Ser His Ala Val Asp His
 145 150 155 160
 Leu Ser Gly Phe Leu Ala Val Thr Val Ile Glu Thr Ala Gly Gln Arg
 165 170 175
 Leu Leu Gly Ala Glu Ser Arg Glu Asp Tyr Leu Glu Asn Arg Asp Gly
 180 185 190
 Glu Gly Ala Val Asp Arg Val Val Leu Arg Glu Ile Ala Arg Arg Glu
 195 200 205
 Trp Phe Val Ile Phe Asp Asp Phe Ser Ser Cys Gly Ala Lys Gln Ser
 210 215 220
 Gln Asn Ala Phe Asp Lys Ser Cys Leu Ala Ser Ala Val Gly Pro Asp
 225 230 235 240
 Asp Ala Glu Glu Ile Val Leu Val Asp Leu Gln Ile Asp Ile Val Glu

				245					250					255			
His	Arg	Ala	Ser	Val	Ile	Gly	Gly	Gly	Glu	Ser	Ser	Asp	Gly	Glu	Glu		
			260						265				270				
Gly	Gly	Gly	Ser	Arg	Cys	Phe	Arg	Met	Leu	Val	Gly	Phe	Ser	Phe	Phe		
		275					280					285					
Ile	His	Glu	Leu	Leu	Glu	Val	Gly	Tyr	Trp	Tyr	Pro	Gly	Ser	Pro	Arg		
	290					295					300						
Arg	Leu	Leu	Ala	Thr	Phe	Ser	Ile	Ser	Ser	Ser	Gln	Ser	Tyr	Glu	Arg		
305					310						315				320		
Gly	Leu	Met	Glu	Ile	Thr	Arg	Val	Pro	Val	Cys	Phe	Ala	Met	Ile	Ser		
				325					330					335			
Ala	Phe	Arg	Arg	Ser	Asn	Ser	Gly	Trp	Thr	Lys	Met	Thr	Arg	Thr	Pro		
			340					345					350				
Ser	Phe	Leu	Gln	Arg	Ser	Ile	Ser	Pro	Phe	Arg	Trp	Ala	Gly	Asp	Gly		
	355					360						365					
Ser	Leu	Pro	Pro	Ser	Ser	Ile	Leu	Ile									
	370					375											

<210> 7762

<211> 304

<212> PRT

<213> B.fragilis

<400> 7762

Asn	Ile	Asn	Arg	Leu	Lys	Arg	Ile	Thr	Glu	Ser	Met	Lys	Ile	Val	Ile		
1				5					10					15			
Lys	Glu	Lys	Val	Ile	Pro	Tyr	Ile	Leu	Ile	Ser	Leu	Phe	Ser	Phe	Ile		
			20					25					30				
Gly	Leu	Ser	Ala	Tyr	Gly	Tyr	Lys	Ala	Glu	Gly	Gln	Gly	Gly	Ser	Lys		
	35						40					45					
Ala	Val	Val	Trp	Ser	Ile	Ser	Lys	Ile	Asp	Thr	Met	Gln	Lys	Asn	Val		
	50					55				60							
Gln	Arg	Asn	Asp	Glu	Arg	Asn	Pro	Asn	Ile	Gln	Asn	Ile	Glu	Tyr	Leu		
65				70					75					80			
Lys	Lys	Met	Phe	Arg	Gln	Lys	Ala	Val	Asp	Glu	Ile	Ser	Glu	Asn	Ile		
			85						90					95			
Val	Tyr	Pro	Leu	Lys	Arg	Thr	Ser	Pro	Ile	Pro	Ser	Val	Glu	Asn	Ala		
		100						105					110				
Glu	Glu	Leu	Lys	Glu	Arg	Phe	Asp	Ser	Ile	Phe	Asp	Glu	Asp	Leu	Ile		
		115					120					125					
Arg	Ile	Ile	Thr	Ser	Ser	Asp	Ile	Asp	Gln	Trp	Ser	Glu	Met	Gly	Trp		
	130					135					140						
Arg	Gly	Ile	Met	Leu	Asp	Asp	Gly	Ile	Leu	Trp	Met	Asp	Tyr	Asp	Gly		
145				150					155					160			
Lys	Ile	Thr	Ala	Val	Asn	Tyr	Gln	Ser	Lys	Tyr	Glu	Lys	Lys	Leu	Ala		
			165						170					175			
Lys	Lys	Leu	Thr	Ser	Lys	Val	Lys	Gly	Asp	Leu	Ser	Ser	Asp	Leu	Arg		
		180						185					190				
His	Asn	Phe	Lys	Gly	Glu	Val	Tyr	Lys	Phe	Lys	Thr	Lys	Asn	Tyr	Phe		
	195						200					205					
Ile	Arg	Ile	Asp	Glu	Leu	Lys	Asn	Gly	Met	Tyr	Arg	Tyr	Ala	Cys	Trp		
	210					215					220						
Lys	Lys	Glu	Asn	Pro	Glu	Ser	Thr	Lys	Pro	Asp	Leu	Val	Leu	Glu	Asn		
225				230						235				240			
Gly	Lys	Ile	Glu	Phe	Ser	Gly	Ser	Gly	Gly	Asn	His	Val	Ile	Thr	Phe		
			245						250					255			
Lys	Asn	Asn	Ile	Tyr	Glu	Tyr	Lys	Val	Phe	His	Asn	Lys	Ile	Ala	Ala		
	260						265						270				
Ser	Gly	Ile	Ala	Asp	Ile	Thr	Leu	Val	Val	Glu	Lys	Asn	Gly	Lys	Glu		

275 280 285
 Ile Leu Ser Glu Asp Gly Lys Leu Glu Asp Asp Ile Thr Gln Thr Asp
 290 295 300

<210> 7763
 <211> 544
 <212> PRT
 <213> B.fragilis

<400> 7763

Tyr Met Asn Arg Thr Phe Ile Met Arg Glu Cys Leu Gly Lys Ala Leu
 1 5 10 15
 Trp Leu Cys Phe Cys Leu Ser Ile Thr Gly Cys Ala Glu Asp Asp Arg
 20 25 30
 Met Thr Pro Leu Ser Ala Asp Ser Gly Asp Thr Ala Asp Glu Leu Ile
 35 40 45
 Pro Ile His Ile Ser Leu Thr Gly Asp Asn Asp Tyr His Ser Ser Ser
 50 55 60
 Phe Asn Asp Ala Ser Thr Arg Ser His Ser Pro Leu Ile Ala Glu Trp
 65 70 75 80
 Val Gly Val Lys Ala Phe Ser Pro Thr Arg Thr Gly Glu Gln Pro Asp
 85 90 95
 Tyr Asp Gly Pro Arg Ile Ala Ser Met Glu Leu Thr Glu Asp Thr Leu
 100 105 110
 Pro Arg Val Ser Thr Arg Ala Thr Val Pro Ala Gly Val Tyr Phe Arg
 115 120 125
 Leu Ile Val Phe Arg Lys Ser Gly Ser Glu Tyr Val Phe Gln Ser Ala
 130 135 140
 Ala Asp Tyr Thr Ser Asn Gly Thr Gly Thr Pro Val Leu Lys Gln Gly
 145 150 155 160
 Arg Leu Leu Thr Arg Ser Gly Thr Ile Arg Val Val Gly Tyr Ser Phe
 165 170 175
 Asn Thr Thr Thr Ala Ala Asp Leu Gly Thr Met Pro Ser Thr Tyr Ala
 180 185 190
 Tyr Asn Ser Ser Thr Val Ser Ile Pro Asn Met Ser Lys Asp Phe Met
 195 200 205
 Thr Phe Asp Ser Gly Asp Ile Thr Asn Val Asn Ser Leu Ser His Asn
 210 215 220
 Leu Pro Val Ser Phe Asn Gln Lys Leu Cys Lys Leu Thr Ile Thr Ile
 225 230 235 240
 Ser Pro Thr Gly Phe Pro Ser Asn Thr Ile Thr Asn Cys Thr Gly Val
 245 250 255
 Tyr Val Lys Gln Gly Gly Asn Ser Thr Ser Trp Lys Ile Gly Pro Ser
 260 265 270
 Thr Asn Val Val Ala Ala Asn Thr Asn Asn Thr Ala Ala Phe Ser Pro
 275 280 285
 Lys Thr Thr Leu Ser Thr Thr Ile Arg Met Val Pro Phe Ala Gly Ala
 290 295 300
 Arg Thr Ile Thr Val His Phe Asn Thr Leu Thr Ile Ser Gly Arg Thr
 305 310 315 320
 Val Pro Asn Asn Thr Glu Ile Thr Ser Thr Gln Ser Val Gln Leu Lys
 325 330 335
 Glu Gly Lys Ser Tyr Thr Met Lys Ile Gln Phe Lys Lys Ala Ile Gly
 340 345 350
 Ile Asn Val Pro Ala Ser Asn Ile Asn Leu Thr Gln Asn Gly Cys Thr
 355 360 365
 Glu Asn Asp Lys Thr Ile Leu Ser Lys Leu Arg Trp Ala Glu Gly Asn
 370 375 380
 Leu Asn Ser Gln Ser Asn Tyr Asn Leu Thr Trp Ala Ser Ser Thr Thr

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385          390          395          400
Asp Tyr Gly Tyr Tyr Tyr Ile Trp Lys Asn Val Tyr Val Ser Ser Gly
          405          410          415
Tyr Thr Gly Tyr Gly Ala Val Asp Pro Cys Thr Arg Leu Asp Glu Ser
          420          425          430
Lys Tyr Gly Ser Gly Trp Arg Thr Pro Thr Arg Ser Glu Phe Ile Ser
          435          440          445
Leu Ser Arg Cys Ser Asn Lys Gln Leu Val Lys Tyr Asn Gly Ile Gln
          450          455          460
Gly Met Trp Phe Met Asn Ser Ser Thr Gly Leu Phe Leu Pro Ala Ala
465          470          475          480
Gly Trp Arg Asp Gly Asn Asn Gly Ser Gly Thr Thr Ala Thr Ala Tyr
          485          490          495
Thr Asp Gly Thr Gly Ser Tyr Tyr Trp Ser Ser Asp Leu Asn Gly Asn
          500          505          510
Ser Ala Tyr Gly Leu Tyr Ile Leu Lys Asn Asp Val Phe Val Asp Ala
          515          520          525
Asn Gly Asn Arg Lys Ser Gly Val Ser Val Arg Cys Val His Asn Leu
          530          535          540

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<210> 7764
<211> 154
<212> PRT
<213> B.fragilis

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<400> 7764
Gln Leu Ser Arg Ser Asp Ile Thr Ile Thr Tyr Asn Thr Met Thr Glu
1          5          10          15
Phe Arg Tyr Ser Ile Cys Glu Pro Leu Asn Pro Lys Val Ile Glu Lys
20          25          30
Gly Met Ile Ala Pro Asp Ser Val Ile Gly Leu Phe Asn Asp Phe Gln
35          40          45
Trp Asp Tyr Tyr Leu Lys Gln Ile Glu Val Ala Glu Thr Arg Lys Met
50          55          60
Asp Ile Tyr Phe Ser Pro Ser Leu Glu Val Glu Asn Lys Ala Asn Lys
65          70          75          80
Asn Gly Leu Thr Ile Ser Ala Val Gly Asp Pro Glu Asp Pro Glu Phe
85          90          95
Tyr Ile Phe Tyr Lys Arg Pro Ile Ser Val Val Lys Lys Gln Phe Phe
100          105          110
Arg Lys Pro Gln Thr Val Val Glu Asp Tyr Val Ser Glu Ile Thr Gly
115          120          125
Gln Thr Lys Glu Asp Ile Ile Glu Cys Leu Asn Ala Leu Ile Lys Asn
130          135          140
Asp Gln Glu Phe Leu Arg Arg Lys Ile Ala
145          150

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<210> 7765
<211> 158
<212> PRT
<213> B.fragilis

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<400> 7765
Gln Arg Leu Ser Asn Ile Ile Arg Met Arg Val Val Ile Gln Arg Val
1          5          10          15
Ser His Ala Ser Val Thr Ile Asp Gly His Cys Lys Ser Ala Ile Gln
20          25          30
Lys Gly Met Met Ile Leu Val Gly Ile Glu Glu Thr Asp Ser Arg Glu
35          40          45

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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Asp Ile Asp Trp Leu Cys Lys Lys Ile Val Asn Leu Arg Ile Phe Asp
 50          55          60
Asp Glu Asn Gly Val Met Asn Lys Ser Ile Leu Glu Asp Glu Gly Asn
65          70          75          80
Ile Leu Val Leu Ser Gln Phe Thr Leu His Ala Ser Thr Lys Lys Gly
          85          90          95
Asn Arg Pro Ser Tyr Ile Lys Ala Ala Lys Pro Glu Ile Ser Ile Pro
          100          105          110
Leu Tyr Glu Gln Phe Cys Asn Asp Leu Ser Cys Ala Leu Gly Lys Glu
          115          120          125
Val Lys Thr Gly Glu Phe Gly Ala Asp Met Lys Val Glu Leu Leu Asn
          130          135          140
Asp Gly Pro Val Thr Ile Cys Ile Asp Thr Lys Asn Lys Glu
145          150          155

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<210> 7766
 <211> 191
 <212> PRT
 <213> B.fragilis

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<400> 7766
Thr Arg Lys Arg Arg Ser His Ala Leu Pro Gln Thr Leu Pro Pro Leu
1          5          10          15
Ser Ala Ser Pro Pro Phe Pro Gln Asn Pro Thr Ile Met Ala Lys Tyr
          20          25          30
Lys Leu Thr Leu Lys Lys Asn Pro Asn Lys Arg Asn Glu Pro Gly Lys
          35          40          45
Trp Tyr Ala Ile Pro Thr Thr Val Asn Ser Leu Asp Thr Arg Ala Val
          50          55          60
Thr Arg Ala Val Thr Arg Asn Thr Thr Val Ala Pro Thr Glu Leu Glu
65          70          75          80
Thr Ser Met Asn Leu Val Cys Asp Gly Ile Pro Ala Leu Leu Gln Gln
          85          90          95
Gly Asn Ser Val Arg Ile Gly Ser Leu Gly Thr Leu Arg Leu Ser Phe
          100          105          110
Gly Ser Thr Gly Thr Glu Asn Ile Asp Asp Phe Asn Ala Ala Thr Met
          115          120          125
Ile Lys Asn Val Lys Ile Val Phe Thr Pro Ser Lys Glu Leu Lys Ala
          130          135          140
Ala Val Gln Glu Gly Leu Ser Phe Glu Asn Ala Gly Val Ile Glu Thr
145          150          155          160
Gly Phe Thr Tyr Pro Ser Val Gln Asp Tyr Lys Lys Tyr Lys Val Ala
          165          170          175
Asp Arg Pro Ala Gly Gly Gly Asp Ile Val Asp Asp Pro Thr Ala
          180          185          190

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<210> 7767
 <211> 303
 <212> PRT
 <213> B.fragilis

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<400> 7767
Asn Ser Leu Ile Met Ser Pro Leu Asn Phe Thr His Ile Leu Thr Gln
1          5          10          15
Thr Val Asp Glu Leu Ser Glu Ser Glu Ser Tyr Lys Gly Leu Phe His
          20          25          30
Gln His Lys Asp Gly Glu Pro Leu Pro Ser Pro Arg Val Leu Cys Asp
          35          40          45
Val Ile Glu Leu Ala Arg Ser Ile Leu Phe Pro Gly Tyr Tyr Gly Asn

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50		55		60
Ser Thr Val Asn Ser Arg Thr Ile Asn Tyr His Ile Gly Val Asn Val				
65		70		75
Glu Lys Leu Phe Asn Leu Leu Thr Glu Gln Ile Leu Ala Gly Leu Cys				80
	85		90	95
Phe Gly Asn Gly Asp Arg Cys Asp Glu Cys Thr Glu Ala Lys Arg Glu				
	100		105	110
Glu Ala Ala Arg Leu Ala Ala Lys Phe Ile Ser Lys Leu Pro His Leu				
	115		120	125
Arg Arg Val Leu Ala Thr Asp Val Glu Ala Ala Tyr Asn Gly Asp Pro				
	130		135	140
Ala Ala Gln Ser Phe Gly Glu Val Ile Phe Cys Tyr Pro Ala Ile Lys				
145		150		155
Ala Ile Ser Asn Tyr Arg Ile Ala His Glu Leu Leu Glu Leu Gly Val				
	165		170	175
Pro Leu Ile Pro Arg Ile Ile Thr Glu Met Ala His Ser Glu Thr Gly				
	180		185	190
Ile Asp Ile His Pro Gly Ala Arg Ile Gly Thr His Phe Thr Ile Asp				
	195		200	205
His Gly Thr Gly Val Val Ile Gly Ala Thr Ser Ile Ile Gly Asn Asn				
210		215		220
Val Lys Leu Tyr Gln Gly Val Thr Leu Gly Ala Arg Ser Phe Pro Leu				
225		230		235
Asp Ala Asp Gly Lys Pro Ile Lys Gly Ile Pro Arg His Pro Ile Leu				
	245		250	255
Glu Asp Asn Val Ile Val Tyr Ser Asn Ala Thr Ile Leu Gly Arg Ile				
	260		265	270
Thr Ile Gly Arg Asp Ala Thr Val Gly Gly Asn Ile Trp Val Thr Glu				
	275		280	285
Asn Ile Pro Ala Gly Ala Arg Ile Val Gln Thr Lys Ala Lys Lys				
290		295		300

<210> 7768

<211> 631

<212> PRT

<213> B.fragilis

<400> 7768

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Gly Ala Gly His Ala Gly Cys Glu Ala Ala Ala Ala Ala Ala Asn Leu				
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Gly Ser Lys Thr Cys Leu Ile Thr Met Asp Met Asn Lys Val Ala Gln				
	35		40	45
Met Ser Cys Asn Pro Ala Val Gly Gly Ile Ala Lys Gly Gln Ile Val				
	50		55	60
Arg Glu Ile Asp Ala Leu Gly Gly Tyr Met Gly Leu Val Thr Asp Gln				
65		70		75
Thr Ala Ile Gln Phe Arg Ile Leu Asn Arg Ser Lys Gly Pro Ala Met				
	85		90	95
Trp Ser Pro Arg Ala Gln Cys Asp Arg Asn Lys Phe Ile Trp Ala Trp				
	100		105	110
Arg Glu Ile Leu Glu Asn Ile Pro Asn Leu His Ile Trp Gln Asp Thr				
	115		120	125
Val Lys Glu Ile Ile Val Glu Asn Gly Glu Val Val Gly Leu Lys Thr				
	130		135	140
Phe Trp Asp Val Thr Phe His Ala Arg Cys Ile Val Leu Thr Ala Gly				
145		150		155
Thr Phe Leu Asn Gly Leu Met His Val Gly Lys Thr Gln Leu Pro Gly				

				165					170					175	
Gly	Arg	Met	Ala	Glu	Pro	Ala	Ser	Tyr	Lys	Leu	Thr	Glu	Ser	Ile	Ala
			180					185					190		
Glu	His	Gly	Ile	Glu	Tyr	Gly	Arg	Met	Lys	Thr	Gly	Thr	Pro	Val	Arg
		195					200					205			
Ile	Asp	Gly	Arg	Ser	Val	His	Tyr	Glu	Leu	Met	Asp	Thr	Gln	Asp	Gly
	210					215					220				
Glu	Cys	Asp	Phe	His	Lys	Phe	Ser	Phe	Met	Asn	Thr	Ser	Val	Arg	His
225				230					235					240	
Leu	Lys	Gln	Leu	Gln	Cys	Trp	Thr	Cys	Phe	Thr	Asn	Glu	Glu	Ala	His
			245					250						255	
Asn	Val	Leu	Arg	Asn	Gly	Leu	Ala	Asp	Ser	Pro	Leu	Phe	Asn	Gly	Gln
		260					265						270		
Ile	Gln	Ser	Ile	Gly	Pro	Arg	Tyr	Cys	Pro	Ser	Ile	Glu	Thr	Lys	Ile
	275					280						285			
Val	Thr	Phe	Pro	Asp	Lys	Glu	Gln	His	Gln	Leu	Phe	Leu	Glu	Pro	Glu
	290				295						300				
Gly	Glu	Thr	Thr	Gln	Glu	Leu	Tyr	Leu	Asn	Gly	Phe	Ser	Ser	Ser	Leu
305				310					315					320	
Pro	Met	Glu	Ile	Gln	Ile	Glu	Ala	Leu	Lys	Lys	Ile	Pro	Ala	Phe	Lys
			325					330						335	
Asp	Leu	Val	Ile	Tyr	Arg	Pro	Gly	Tyr	Ala	Ile	Glu	Tyr	Asp	Tyr	Phe
		340					345					350			
Asp	Pro	Thr	Gln	Leu	Lys	His	Thr	Leu	Glu	Ser	Lys	Lys	Ile	Lys	Asn
	355					360						365			
Leu	Phe	Phe	Ala	Gly	Gln	Val	Asn	Gly	Thr	Thr	Gly	Tyr	Glu	Glu	Ala
	370				375						380				
Gly	Gly	Gln	Gly	Ile	Ile	Ala	Gly	Ile	Asn	Ala	His	Ile	Asn	Cys	His
385				390					395					400	
Gly	Gly	Glu	Pro	Phe	Thr	Leu	Ala	Arg	Asp	Glu	Ala	Tyr	Ile	Gly	Val
			405					410					415		
Leu	Ile	Asp	Asp	Leu	Val	Thr	Lys	Gly	Val	Asp	Glu	Pro	Tyr	Arg	Met
		420					425					430			
Phe	Thr	Ser	Arg	Ala	Glu	Tyr	Arg	Ile	Leu	Leu	Arg	Met	Asp	Asp	Ala
	435					440						445			
Asp	Met	Arg	Leu	Thr	Glu	Arg	Ala	Tyr	Lys	Leu	Gly	Leu	Val	Lys	Glu
	450				455					460					
Asp	Arg	Tyr	Ala	Leu	Leu	Lys	Ser	Lys	Arg	Glu	Ala	Val	Glu	Asn	Ile
465				470					475					480	
Val	Asn	Phe	Thr	Arg	Asn	Tyr	Ser	Ile	Lys	Ala	Ala	Leu	Ile	Asn	Asp
		485						490					495		
Ala	Leu	Glu	Asn	Leu	Gly	Thr	Thr	Pro	Leu	Arg	Gln	Gly	Cys	Lys	Leu
	500						505					510			
Ile	Asp	Leu	Ile	Asn	Arg	Pro	Gln	Ile	Thr	Ile	Glu	Asn	Ile	Ser	Glu
	515					520					525				
Tyr	Val	Pro	Ala	Phe	Lys	Arg	Glu	Leu	Asp	Lys	Ile	Thr	Asp	Glu	Arg
	530				535						540				
Lys	Glu	Glu	Ile	Leu	Glu	Ala	Ala	Glu	Ile	Leu	Ile	Lys	Tyr	Glu	Gly
545				550					555					560	
Tyr	Ile	Gly	Arg	Glu	Arg	Ile	Ile	Ala	Asp	Lys	Leu	Ala	Arg	Leu	Glu
			565					570					575		
Ser	Ile	Lys	Ile	Lys	Gly	Lys	Phe	Asp	Tyr	Asp	Ser	Leu	Gln	Ser	Leu
		580					585					590			
Ser	Thr	Glu	Ala	Arg	Gln	Lys	Leu	Lys	Lys	Ile	Asp	Pro	Glu	Thr	Ile
	595					600					605				
Ala	Gln	Ala	Ser	Arg	Ile	Pro	Gly	Val	Ser	Pro	Ser	Asp	Ile	Asn	Val
	610				615						620				
Leu	Leu	Val	Leu	Ser	Gly	Arg									
625					630										

165
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<210> 7769
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 <212> PRT
 <213> B.fragilis

<400> 7769

His	Thr	Gly	Met	Leu	Ser	Ile	Phe	Met	Ser	Glu	Gln	Phe	Glu	Met	Ile
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Ala	Lys	Thr	Phe	Gln	Gly	Leu	Glu	Glu	Ile	Leu	Ala	Glu	Glu	Leu	Thr
			20					25					30		
Thr	Leu	Gly	Ala	Asn	Asp	Val	Gln	Ile	Gly	Arg	Arg	Met	Val	Ser	Phe
		35					40					45			
Thr	Gly	Asp	Lys	Glu	Met	Met	Tyr	Lys	Ala	Asn	Phe	Cys	Leu	Arg	Thr
	50					55					60				
Ala	Ile	Arg	Ile	Leu	Lys	Pro	Ile	Lys	His	Phe	Thr	Ala	Lys	Asp	Ala
65					70					75					80
Asp	Ala	Val	Tyr	Glu	Gln	Ile	Lys	Ala	Ile	Arg	Trp	Glu	Glu	Ile	Leu
				85					90					95	
Asp	Val	Asp	Lys	Thr	Phe	Ala	Val	Asp	Ala	Val	Val	Phe	Ser	Asp	Glu
			100					105					110		
Phe	Arg	His	Ser	Lys	Phe	Val	Ser	Tyr	Lys	Val	Lys	Asp	Ala	Ile	Val
		115					120					125			
Asp	Tyr	Phe	Arg	Glu	Leu	Asn	Gly	Lys	Arg	Pro	Ser	Val	Arg	Ile	Ser
	130					135					140				
Arg	Pro	Asp	Val	Leu	Leu	Asn	Ile	His	Ile	Ala	Gln	Thr	Thr	Cys	Thr
145					150					155					160
Leu	Ser	Leu	Asp	Ser	Ser	Gly	Glu	Ser	Leu	His	Arg	Arg	Gly	Tyr	Arg
				165					170					175	
Gln	Glu	Ala	Val	Glu	Ala	Pro	Leu	Asn	Glu	Val	Leu	Ala	Ala	Gly	Met
			180					185					190		
Ile	Leu	Met	Thr	Gly	Trp	Lys	Gly	Glu	Cys	Asp	Leu	Ile	Asp	Pro	Met
		195					200					205			
Cys	Gly	Ser	Gly	Thr	Ile	Pro	Ile	Glu	Ala	Ala	Leu	Ile	Ala	Arg	Asn
	210					215					220				
Ile	Ala	Pro	Gly	Val	Phe	Arg	Lys	Glu	Phe	Ala	Phe	Glu	Lys	Trp	Gly
225					230					235					240
Asp	Phe	Asp	Gln	Asn	Leu	Phe	Asp	Arg	Ile	Tyr	Asn	Asp	Asp	Ser	Gln
				245					250					255	
Glu	Arg	Glu	Phe	Thr	His	Lys	Ile	Tyr	Gly	Tyr	Asp	Asn	Asn	Pro	Lys
			260					265					270		
Ala	Asn	Glu	Ile	Ala	Thr	His	Asn	Val	Lys	Ala	Ala	Gly	Val	Ser	Lys
		275					280					285			
Asp	Ile	Ile	Leu	Lys	Leu	Gln	Pro	Phe	Gln	Gln	Phe	Glu	Gln	Pro	Ala
	290					295					300				
Glu	Lys	Ser	Ile	Ile	Ile	Thr	Asn	Pro	Pro	Tyr	Gly	Glu	Arg	Ile	Ser
305					310					315					320
Thr	Asn	Asp	Leu	Leu	Gly	Leu	Tyr	Asn	Met	Ile	Gly	Glu	Arg	Leu	Lys
			325						330					335	
His	Ala	Phe	Val	Gly	Asn	Asp	Ala	Trp	Ile	Leu	Ser	Tyr	Arg	Glu	Glu
			340					345					350		
Cys	Phe	Asp	Gln	Ile	Gly	Leu	Lys	Pro	Ser	Val	Lys	Thr	Pro	Leu	Phe
		355					360					365			
Asn	Gly	Pro	Leu	Glu	Cys	Glu	Phe	Arg	Lys	Tyr	Gln	Ile	Phe	Asp	Gly
	370					375					380				
Lys	Tyr	Lys	Glu	Phe	Lys	Ser	Gln	Glu	Gly	Gly	Asp	Glu	Asn	Gly	Glu
385					390					395					400
Arg	Ala	Pro	Lys	Glu	Arg	Arg	Glu	Phe	Lys	Pro	Arg	Arg	Glu	Glu	Gly
				405					410					415	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

Gly Phe Arg Gly Glu Arg Arg Pro Arg Glu Glu Arg Asn Ser Glu Tyr
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 Gly Asp Arg Arg Pro Arg Glu Phe Lys Gly Asn Arg Glu Pro Lys Ile
 435 440 445
 Lys Lys Pro Gln Glu Asp
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<211> 566

<212> PRT

<213> B.fragilis

<400> 7770

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 Phe Leu Val Gly Gly Val Val Ser Cys Gln Arg Ser Ser Ser Pro Tyr
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 Pro Tyr Ser Leu Arg Tyr Ala Asp Ser Leu Met Glu Ile Ser Pro Glu
 35 40 45
 Arg Thr Leu Ala Tyr Leu Arg Lys Leu Asp Val Ser Thr Tyr Ser Ala
 50 55 60
 Gly Asp Arg Ala Tyr Phe Ser Leu Leu Phe Thr Gln Ala Thr Asp Lys
 65 70 75 80
 Asn Met Leu Ser Leu Leu Pro Cys Asp Ser Leu Ile Asp Thr Ala Leu
 85 90 95
 Asp Tyr Tyr Ile Lys Lys Asp Gly Val Asn Leu Ala Lys Ala Trp Leu
 100 105 110
 Tyr Lys Gly Arg Ile Gln Lys Lys Met Asn Met Thr Glu Gln Ala Leu
 115 120 125
 Lys Ser Cys Phe Thr Ala Leu Gln Gly Val Glu Gly Asn Thr Gly Glu
 130 135 140
 Glu Leu Lys Leu Lys Gly Met Leu Tyr Glu Asp Met Gly Ser Ile Tyr
 145 150 155 160
 Leu His Gln Ser Leu Tyr Gln Lys Ala Phe Asp Ala Phe Tyr Arg Ser
 165 170 175
 Tyr Gln Cys Asp Ser Leu Leu Asn Asp His Arg Leu Val Met Tyr Pro
 180 185 190
 Leu Ser Asn Met Gly Trp Val Arg Val Ile Gln Gly Lys Thr Val Glu
 195 200 205
 Ala Phe Tyr Tyr Leu Asn Gln Ser Ile Gln Leu Ala Leu Arg Leu Asn
 210 215 220
 Asp Ser Ala Phe Val Ser Asp Ile Tyr Glu Arg Met Ser Leu Asn Cys
 225 230 235 240
 Glu Asn Val Asp Ser Ala Phe Leu Tyr Ala His Leu Ser His Gln Tyr
 245 250 255
 Leu Thr Lys Asp Gly Asp Ser Ile Ser Leu Trp Leu Thr Phe Gly Asp
 260 265 270
 Leu Tyr Leu Asp Lys Gln Glu Leu Asp Ser Ala Glu Tyr Tyr Leu Lys
 275 280 285
 Arg Ile Leu Asp Thr Ala Asp Phe Lys Arg Lys Ile Leu Ala Ser Tyr
 290 295 300
 Ser Leu Ala Glu Val Glu Lys Ile Arg Gly Asn Tyr Gln Arg Ala Phe
 305 310 315 320
 Glu Tyr Gln Ser Tyr Gly Asp Asn Ile Asp Ser Ile Phe Leu Leu
 325 330 335
 Asn Lys Ala Ser Asp Ile Glu Arg Leu Ala Tyr Lys Tyr Asp Ser Glu
 340 345 350
 Ala Lys Val Val Lys Glu Lys Glu Lys Gln Arg Phe Phe Ile Gln Gln
 355 360 365

120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990

Leu Cys Tyr Gly Gly Val Leu Phe Leu Leu Val Ile Ala Ile Ile Phe
 370 375 380
 Gln Arg Ile Tyr Arg Arg Arg Gln Ile Ala Arg Leu Leu Tyr Glu Gln
 385 390 395 400
 Arg Ile Thr Tyr Leu Asn Glu Lys Thr Ala Leu Ser Gln Leu Gln Ile
 405 410 415
 Glu Arg Leu Glu Val Gln Ile Ser Ala Leu Lys Gln Ser Gly Met Glu
 420 425 430
 Arg Glu Gln Glu Ile Asp Leu Lys Gln Ala Glu Leu Cys Cys Val Ile
 435 440 445
 Asp Glu Lys Ala Arg Leu Arg Asn Cys Leu Phe Met Glu Thr Ser Ile
 450 455 460
 Phe Lys His Ile Arg Glu Leu Ser Thr Gln Pro Arg Leu Gly Gln Asn
 465 470 475 480
 Gly Thr Lys Gly Ser Pro Lys Val Leu Leu Met Lys Glu Gln Glu Gln
 485 490 495
 Leu Lys Asn Ile Leu Phe Gly Ile Tyr Asp Asp Tyr Ile Arg Tyr Leu
 500 505 510
 Lys Gly Thr Tyr Pro Lys Ile Thr Asp Asn Asp Cys Ile Tyr Cys Cys
 515 520 525
 Leu Lys Leu Cys Glu Phe Asp Asp Gln Thr Ile Ala Tyr Cys Phe Gly
 530 535 540
 Asn Val Ser Lys Gln Ile Val Ala Gln Arg Arg Leu Arg Leu Lys Lys
 545 550 555 560
 Lys Met Ala Glu Ala Asn
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<210> 7771

<211> 312

<212> PRT

<213> B.fragilis

<400> 7771

Val Thr Ile Met Glu Thr Lys Ile Asn Ser Lys Ala Leu Lys Ala Glu
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 20 25 30
 Ile Asp Gln Ala His Gln Asn Ala Leu Lys Met Trp Leu Asp Ala Asp
 35 40 45
 Arg Gln Ala Gly Met Thr Tyr Met Ala Asn His Phe Asp Lys Arg Cys
 50 55 60
 Asp Pro Ala Leu Leu Val Glu Gly Thr Arg Cys Val Val Ser Val Ala
 65 70 75 80
 Leu Asn Tyr Tyr Pro Ala Thr Arg Ile Pro Asp Glu Glu Tyr Gln Phe
 85 90 95
 Ala Trp Tyr Ala Tyr Gly Lys Asp Tyr His Asp Leu Met Arg Glu Lys
 100 105 110
 Leu Ala Ala Leu Phe Arg Phe Ile Gln Glu Ser Asp Val Pro Glu Leu
 115 120 125
 Asn Gly Arg Met Phe Cys Asp Thr Ala Pro Val Pro Glu Arg Tyr Trp
 130 135 140
 Ala Trp Arg Ala Gly Leu Gly Trp Ile Gly Lys Asn Thr Gln Leu Ile
 145 150 155 160
 Ile Pro His Ala Gly Ser Thr Phe Phe Leu Gly Glu Leu Phe Leu Asn
 165 170 175
 Ala Glu Ala Asp Thr Tyr Asp Arg Pro Gln Pro Asn Arg Cys Gly Arg
 180 185 190
 Cys Asn Arg Cys Leu Gln Ala Cys Pro Thr Lys Ala Leu Glu Thr Pro
 195 200 205

Tyr Ser Leu Asn Ala His Arg Cys Leu Ser Tyr Leu Thr Ile Glu Asn
 210 215 220
 Lys Ser Glu Ile Pro Asp Ser Ile Ala Pro Phe Met Gly Asn Arg Val
 225 230 235 240
 Tyr Gly Cys Asp Glu Cys Gln Lys Ala Cys Pro Trp Asn Arg Phe Ala
 245 250 255
 Thr Pro Cys Arg Thr Pro Glu Leu Gln Pro Ser Pro Glu Phe Met Asn
 260 265 270
 Met Lys Lys Glu Asp Trp Lys Gln Leu Ser Glu Glu Lys Tyr Arg Ala
 275 280 285
 Leu Phe Lys Gly Ser Ala Val Lys Arg Ala Lys Tyr Ser Gly Leu Ile
 290 295 300
 Arg Asn Ile Arg Gln Met Glu Asp
 305 310

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 Gln Pro Ser Ile Thr Phe Asp Arg Ser Pro Ala Lys Thr Glu Glu Asp
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 20 25 30
 Lys Arg His Gln Cys Ile Ile Ser Ala Phe Gly Thr Ile Asp Cys Cys
 35 40 45
 Val Ser Arg Glu Thr Lys His Leu Lys Lys Gln His Lys Arg Met Ile
 50 55 60
 Met Ser Lys Glu Lys Leu Ile Lys Ser Ile Arg Glu Ile Pro Asp Phe
 65 70 75 80
 Pro Ile Pro Gly Ile Leu Phe Tyr Asp Val Thr Thr Leu Phe Lys Asp
 85 90 95
 Ser Glu Arg Leu Gln Glu Leu Ser Asp Ile Met Tyr Glu Met Tyr Lys
 100 105 110
 Asp Lys Gly Ile Thr Lys Val Val Gly Ile Glu Ser Arg Gly Phe Ile
 115 120 125
 Met Gly Pro Ile Leu Ala Thr Arg Leu Gly Thr Gly Phe Ile Pro Ile
 130 135 140
 Arg Lys Pro Gly Lys Leu Pro Ala Glu Thr Met Glu Glu Ser Phe His
 145 150 155 160
 Lys Glu Tyr Gly Lys Asp Ser Val Gln Ile His Lys Asp Ala Leu Asn
 165 170 175
 Glu Asn Asp Val Val Leu Leu His Asp Asp Leu Leu Ala Thr Val Gly
 180 185 190
 Thr Met Lys Ala Ala Cys Asn Leu Val Lys Lys Leu His Pro Lys Lys
 195 200 205
 Val Tyr Val Asn Phe Ile Ile Glu Leu Lys Glu Leu Asn Gly Lys Gln
 210 215 220
 Val Phe Glu Asn Asp Gln Asp Val Asp Ile Gln Ser Val Leu Ser Leu
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 <212> PRT
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<400> 7773
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 Ser Ala Phe Gly Gly Met Ser Ile Asp Ser Val Glu Arg Cys Ala Gln
 35 40 45
 Asp Ser Leu Phe Ser Asn Thr Arg Tyr Ser Arg Ser Leu Leu Arg His
 50 55 60
 Ala Met Ala Asp Ala Pro Asp Ser Leu Ser Tyr Tyr Tyr Leu Leu Ser
 65 70 75 80
 Phe Tyr Ser Lys Ser Tyr Phe Val Thr Ala Asp Phe Asp Ser Val Leu
 85 90 95
 Tyr Tyr Asn Arg Leu Val Lys Arg Phe Cys Asn Glu Val Glu Leu Ser
 100 105 110
 Ala Glu Val His Asp Leu Leu Ser Thr Val Tyr Asn Met Glu Gly Asn
 115 120 125
 Val Leu Met Gln Arg Thr Gln Pro Asp Ser Ala Ile Ile Ser Tyr Lys
 130 135 140
 Lys Ala Tyr Glu Glu Arg Leu Gln Gly Gln Gln Thr Asp Tyr Leu Pro
 145 150 155 160
 Asp Leu Cys Ile Asn Leu Ala Asp Ala Asn Val His Lys Gly Asp Tyr
 165 170 175
 Ala Tyr Ala Ala Tyr Tyr Tyr Arg Arg Ala Leu Phe Ile Cys Asp Ser
 180 185 190
 Leu Gly Leu Pro Asp Arg Asn Lys Phe Pro Val Tyr Tyr Gly Leu Gly
 195 200 205
 Gln Thr Tyr Met Glu Leu Arg Asp Phe Glu Leu Ser Asn His Tyr Tyr
 210 215 220
 Glu Leu Ala Gly Asn Phe Phe Pro Gln Met Ser Val Ser Glu Lys Trp
 225 230 235 240
 Thr Tyr Leu Asn Asn Arg Gly Asn His Phe Tyr Tyr Lys Lys Asp Tyr
 245 250 255
 Pro Gln Ala Val His Tyr Ile Gly Arg Ala Leu Glu Val Val Lys Ser
 260 265 270
 Tyr Pro Gln Met Val Phe Glu Gln Asn Leu Cys Lys Ala Asn Leu Gly
 275 280 285
 Glu Leu Tyr Val Ile Thr Asn Lys Leu Asp Ser Ala Gln Leu Tyr Leu
 290 295 300
 Asp Glu Ser Tyr Arg Phe Phe Ser Gly Ile Gly Asn Gln Ser Ala Leu
 305 310 315 320
 Tyr Tyr Ile Glu Thr Gln Met Ile Glu Leu Ala Leu Lys Lys Gly Asn
 325 330 335
 Val Ala Leu Ala Gly Asp Ile Ile Arg Arg Ser Ala Asp Tyr Gly His
 340 345 350
 Ile Asp Ala Asn Met Ile Asn Ile Arg Asn His Tyr Leu Gln His Tyr
 355 360 365
 Tyr Glu Gln Val Gly Asn Tyr Lys Lys Ala Tyr Glu Tyr Gln Lys His
 370 375 380
 Asp Leu Gln Leu Asn Asp Ser Ile Arg Asn Glu Arg Val Arg Thr Arg
 385 390 395 400
 Val Ala Glu Leu Asp Met Arg Tyr Arg Gln Asp Thr Ile Val Met Arg
 405 410 415
 Lys Glu Leu Val Ile Glu Lys Gln Lys Gly Glu Met Glu Val Leu Lys
 420 425 430
 Leu Thr Thr Tyr Ile Trp Ala Leu Ile Gly Ile Val Ser Val Ile Val
 435 440 445
 Ala Gly Leu Val Tyr Trp Tyr Met Lys Lys Lys Arg Met Phe Leu Gln
 450 455 460
 Glu Arg His Ile Asn Gln Ile Ser Arg Phe Arg Met Glu Asn Ile Arg
 465 470 475 480

[illegible]

Case	Age	Sex	Occupation	Duration of symptoms	Site of lesion	Pathological findings
1	45	M	Teacher	10 years	Right frontal lobe	Chronic inflammation with astrocytosis and microglia
2	52	F	Homemaker	5 years	Left temporal lobe	Acute inflammation with neutrophils and mononuclear cells
3	68	M	Retired	15 years	Right parietal lobe	Chronic inflammation with astrocytosis and microglia
4	72	F	Homemaker	8 years	Left frontal lobe	Chronic inflammation with astrocytosis and microglia
5	78	M	Retired	12 years	Right temporal lobe	Chronic inflammation with astrocytosis and microglia

<400>	7774															
Pro	Lys	Glu	Met	Phe	Ile	Glu	Gln	Pro	Pro	Trp	Phe	Phe	Arg	Ala	Ile	
1				5					10					15		
Tyr	Pro	Asp	Ala	Ile	Phe	Arg	Met	Asp	Pro	Asp	Glu	Lys	Ala	Val	Tyr	
			20					25					30			
Leu	Thr	Phe	Asp	Asp	Gly	Pro	Ile	Pro	Glu	Val	Thr	Pro	Trp	Val	Leu	
		35					40					45				
Glu	Leu	Leu	Asp	Lys	His	Asn	Ile	Lys	Ala	Thr	Phe	Phe	Met	Val	Gly	
	50					55					60					
Asp	Asn	Ile	Arg	Lys	His	Pro	Asp	Val	Phe	Arg	Met	Val	Val	Glu	Arg	
65					70					75					80	
Gly	His	Arg	Ile	Gly	Asn	His	Thr	Phe	Asn	His	Ile	Arg	Gly	Phe	Glu	
				85					90					95		
Tyr	Leu	Ser	Ser	Asn	Tyr	Leu	Ala	Asn	Thr	Asp	Lys	Ala	Asn	Glu	Met	
			100					105					110			
Met	Lys	Thr	Asp	Leu	Phe	Arg	Pro	Pro	His	Gly	His	Met	Arg	Trp	Met	
		115					120					125				
Gln	Tyr	Met	Thr	Leu	Lys	Arg	His	Tyr	Lys	Ile	Ile	Met	Trp	Asp	Leu	
	130					135					140					
Val	Thr	Arg	Asp	Tyr	Ser	Lys	Lys	Leu	Arg	Pro	Pro	Gln	Val	Leu	Ala	
145					150					155					160	
Asn	Val	Met	Arg	Tyr	Ala	Arg	Asn	Gly	Ser	Ile	Ile	Thr	Phe	His	Asp	
				165					170					175		
Ser	Leu	Lys	Ser	Trp	Asn	Asn	Gly	Asn	Leu	Gln	Tyr	Ala	Leu	Pro	Arg	
			180					185					190			
Ala	Ile	Asp	Phe	Leu	Lys	Glu	Glu	Gly	Tyr	Glu	Phe	Arg	Leu	Leu		
		195					200					205				

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<400> 7775

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 35 40 45
 Glu Asn Ala Leu Arg Pro Leu Ser Phe Glu Asp Phe Asn Gly Gln Asp
 50 55 60
 Lys Val Val Asp Asn Leu Arg Ile Phe Val Lys Ala Ala Arg Leu Arg
 65 70 75 80
 Ala Glu Ala Leu Asp His Val Leu Leu His Gly Pro Pro Gly Leu Gly
 85 90 95
 Lys Thr Thr Leu Ser Asn Ile Ile Ala Asn Glu Leu Gly Val Gly Phe
 100 105 110
 Lys Val Thr Ser Gly Pro Val Leu Asp Lys Pro Gly Asp Leu Ala Gly
 115 120 125
 Val Leu Thr Ser Leu Glu Pro Asn Asp Val Leu Phe Ile Asp Glu Ile
 130 135 140
 His Arg Leu Ser Pro Val Val Glu Glu Tyr Leu Tyr Ser Ala Met Glu
 145 150 155 160
 Asp Tyr Arg Ile Asp Ile Met Ile Asp Lys Gly Pro Ser Ala Arg Ser
 165 170 175
 Ile Gln Ile Asp Leu Asn Pro Phe Thr Leu Val Gly Ala Thr Thr Arg
 180 185 190
 Ser Gly Leu Leu Thr Ala Pro Leu Arg Ala Arg Phe Gly Ile Asn Leu
 195 200 205
 His Leu Glu Tyr Tyr Asp Asp Ile Leu Ser Asn Ile Ile Ser Arg
 210 215 220
 Ser Ala Gly Ile Leu Asp Val Pro Cys Ser Ser Gln Ala Ala Gly Glu
 225 230 235 240
 Ile Ala Ser Arg Ser Arg Gly Thr Pro Arg Ile Ala Asn Ala Leu Leu
 245 250 255
 Arg Arg Val Arg Asp Phe Ala Gln Val Lys Gly Ser Gly Ser Ile Asp
 260 265 270
 Thr Glu Ile Ala Asn Tyr Ala Leu Glu Ala Leu Asn Ile Asp Lys Tyr
 275 280 285
 Gly Leu Asp Glu Ile Asp Asn Lys Ile Leu Cys Thr Ile Ile Asp Lys
 290 295 300
 Phe Lys Gly Gly Pro Val Gly Leu Thr Thr Ile Ala Thr Ala Leu Gly
 305 310 315 320
 Glu Asp Ala Gly Thr Ile Glu Glu Val Tyr Glu Pro Phe Leu Ile Lys
 325 330 335
 Glu Gly Phe Leu Lys Arg Thr Pro Arg Gly Arg Glu Val Thr Glu Leu
 340 345 350
 Ala Tyr Lys His Leu Gly Arg Ser Leu Tyr Asn Ser Gln Lys Thr Leu
 355 360 365
 Phe Asn Asp
 370

<210> 7776
 <211> 354
 <212> PRT

<213> B.fragilis

<400> 7776

Phe Ile Phe Phe Ser Phe Phe Met Val Lys Val Gln Lys Asn Thr Val
 1 5 10 15
 Leu Thr Val Leu Leu Leu Leu Leu Cys Ser Asn Ser Val Cys Met Asp
 20 25 30
 Ser Leu Ser Leu Ile Lys Ser Pro Ile Thr Thr Glu Leu Glu Asp Phe
 35 40 45
 Lys Asn Leu Phe Asp Ser Ser Leu Ser Ser Ser Asn Leu Leu Leu Asn
 50 55 60
 Asn Val Ile Ala His Ile Arg Gln Arg Asn Gly Lys Met Met Arg Pro
 65 70 75 80
 Ile Leu Val Leu Leu Val Ala Lys Leu Tyr Gly Glu Ile Lys Pro Glu
 85 90 95
 Thr Leu His Ala Ala Val Ser Leu Glu Leu Leu His Thr Ala Ser Leu
 100 105 110
 Val His Asp Asp Val Val Asp Glu Ser Thr Glu Arg Arg Gly Gln Leu
 115 120 125
 Ser Val Asn Ala Ile Phe Asn Asn Lys Val Ala Val Leu Val Gly Asp
 130 135 140
 Phe Leu Leu Ala Thr Ser Leu Val His Ala Glu Arg Thr Arg Asn His
 145 150 155 160
 Asp Ile Ile Gly Val Val Ala Cys Leu Gly Gln Asp Leu Ala Glu Gly
 165 170 175
 Glu Ile Leu Gln Leu Ser Asn Val Ser Asn Arg Glu Tyr Ser Glu Thr
 180 185 190
 Ile Tyr Phe Asp Val Ile Arg Lys Lys Thr Ala Ala Leu Phe Ala Ala
 195 200 205
 Cys Thr Lys Ala Ala Ala Leu Ser Val Glu Val Thr Asp Glu Lys Ala
 210 215 220
 Glu Phe Ala Arg Leu Phe Gly Glu Asn Ile Gly Ile Cys Phe Gln Ile
 225 230 235 240
 Lys Asp Asp Ile Phe Asp Tyr Phe Glu Ser Lys Glu Ile Gly Lys Pro
 245 250 255
 Thr Gly Asn Asp Met Leu Glu Gly Lys Leu Thr Leu Pro Ala Leu Tyr
 260 265 270
 Val Leu Asn Thr Thr Thr Asp Ala Trp Ala Gln Glu Met Ala Leu Arg
 275 280 285
 Val Lys Ala Gly Thr Ala Thr Val Asp Glu Ile Thr Arg Leu Ile Glu
 290 295 300
 Phe Ile Lys Gln Asn Gly Gly Ile Glu Tyr Ala Val Lys Val Met Tyr
 305 310 315 320
 Glu Tyr Lys Glu Arg Ala Leu Asp Leu Leu Arg Thr Leu Pro Asp Ser
 325 330 335
 Ala Val Lys Thr Ser Leu Ile Thr Tyr Leu Asp Tyr Val Val Asp Arg
 340 345 350
 Asp Lys

<210> 7777

<211> 136

<212> PRT

<213> B.fragilis

<400> 7777

Asn Phe Val Val Lys Tyr Lys Leu Ile Ile Met Lys Lys Val Phe Phe
 1 5 10 15
 Leu Tyr Cys Ile Ser Leu Leu Cys Ile Tyr Gly Cys Asn Asp Asp Ser

20	25	30
Asp Lys Tyr Ser Ser Asn Phe Leu Lys Ser Arg Glu Val Thr Leu Asn		
35	40	45
Ala Glu Gly Gly Asp Ile Thr Val Glu Gly Arg Glu Lys Phe Ile Leu		
50	55	60
Val Gln Thr Glu Glu Ile Leu Asn Gln Asp Thr Ile Phe Ser Ile Gly		
65	70	75
Glu Ile Asn Gly Val Glu Tyr Gln Gly Gly Trp Tyr Gln Leu Glu Val		
85	90	95
Asn Gly Lys Glu Met Thr Leu Asn Cys Asp Arg Asn Leu Thr Gly Asn		
100	105	110
Lys Arg Lys Val Val Leu His Phe Gln Gly Thr Gly Asn Ser Phe Asp		
115	120	125
Val Phe Ser Leu Thr Gln Leu Glu		
130	135	

<210> 7778

<211> 1001

<212> PRT

<213> B.fragilis

<400> 7778

Ala Ile Thr Leu Leu Ser Lys Arg Phe Glu Leu Asp Arg Glu Leu Ser		
1	5	10
Asn Arg Phe Leu Lys Ser Ser Ser Ser Val Val Ile Gly Asp Phe Ile		
20	25	30
Lys Asp Lys Leu Ser Met His Thr Leu Phe Glu His Lys Ser Asn Asn		
35	40	45
Lys Thr Val Asn Thr Val Phe Phe Cys Thr Phe Thr Met Lys Lys Leu		
50	55	60
Lys Asn Met Asn Gln Asn Ser Lys Leu Phe Leu Leu Asp Ala Tyr Ala		
65	70	75
Leu Ile Tyr Arg Ala Tyr Tyr Ala Phe Ile Lys Asn Pro Arg Ile Asn		
85	90	95
Ser Lys Gly Phe Asn Thr Ser Ala Ile Leu Gly Phe Val Asn Thr Leu		
100	105	110
Glu Glu Val Leu Lys Lys Glu Asn Pro Thr His Ile Gly Val Ala Phe		
115	120	125
Asp Pro Pro Gly Pro Thr Phe Arg His Glu Ala Phe Glu Gln Tyr Lys		
130	135	140
Ala Gln Arg Glu Glu Thr Pro Glu Ala Ile Arg Leu Ser Val Pro Ile		
145	150	155
Ile Lys Asp Ile Ile Lys Ala Tyr Arg Ile Pro Ile Leu Glu Val Ala		
165	170	175
Gly Tyr Glu Ala Asp Asp Val Ile Gly Thr Leu Ala Thr Glu Ala Gly		
180	185	190
Asn Gln Gly Ile Thr Thr Tyr Met Met Thr Pro Asp Lys Asp Tyr Gly		
195	200	205
Gln Leu Val Thr Asp His Val Phe Met Tyr Arg Pro Lys Tyr Gly Asp		
210	215	220
Lys Glu Phe Glu Val Met Gly Val Glu Gln Val Lys Ala Lys Phe Asp		
225	230	235
Ile Gln Ser Pro Ala Gln Val Ile Asp Met Leu Gly Leu Met Gly Asp		
245	250	255
Ser Ser Asp Asn Ile Pro Gly Cys Pro Gly Val Gly Glu Lys Thr Ala		
260	265	270
Gln Lys Leu Ile Ala Glu Phe Gly Ser Ile Glu Asn Leu Leu Glu His		
275	280	285
Thr Asp Gln Leu Lys Gly Ala Leu Lys Thr Lys Val Glu Thr Asn Arg		

[illegible]

Asp Asp Gly Cys Ser Phe Phe Ser Ala Asp Tyr Ser Gln Ile Glu Leu
 770 775 780
 Arg Ile Met Ala His Leu Ser Glu Asp Lys Asn Met Ile Asp Ala Phe
 785 790 795 800
 Leu Ser Gly Tyr Asp Ile His Ala Ala Thr Ala Ala Lys Ile Tyr Lys
 805 810 815
 Val Asp Ile Lys Glu Val Thr Ala Asp Met Arg Arg Lys Ala Lys Thr
 820 825 830
 Ala Asn Phe Gly Ile Ile Tyr Gly Ile Ser Val Phe Gly Leu Ala Glu
 835 840 845
 Arg Met Asn Val Asp Arg Lys Glu Ala Lys Glu Leu Ile Asp Gly Tyr
 850 855 860
 Phe Glu Thr Tyr Pro Gln Val Lys Ser Tyr Met Asp Lys Ser Ile Gln
 865 870 875 880
 Val Ala Arg Glu His Gly Tyr Val Glu Thr Ile Phe His Arg Lys Arg
 885 890 895
 Phe Leu Pro Asp Ile Asn Ser Arg Asn Ala Val Val Arg Gly Tyr Ala
 900 905 910
 Glu Arg Asn Ala Ile Asn Ala Pro Ile Gln Gly Ser Ala Ala Asp Ile
 915 920 925
 Ile Lys Val Ala Met Ala Arg Ile Tyr Glu Arg Phe Lys Ala Glu Gly
 930 935 940
 Leu Lys Ala Lys Met Ile Leu Gln Val His Asp Glu Leu Asn Phe Ser
 945 950 955 960
 Val Pro Ala Lys Glu Lys Glu Ile Val Glu Gln Val Val Ile Glu Glu
 965 970 975
 Met Glu Lys Ala Tyr Arg Met His Val Pro Leu Lys Ala Asp Cys Gly
 980 985 990
 Trp Gly Thr Asn Trp Leu Glu Ala His
 995 1000

<210> 7779
 <211> 256
 <212> PRT
 <213> B.fragilis

<400> 7779

Ser Leu Ile Ser Lys Trp Asn Ala Leu Pro Lys Met Lys Pro Asn Lys
 1 5 10 15
 Phe Ile Ile Glu Lys Gln Val Ser Glu Phe Arg Met Asp Asn Gly Leu
 20 25 30
 Ser Ala Thr Glu Pro Ile Thr Leu Lys Ser Leu Leu Leu Lys Leu Asn
 35 40 45
 Ile Leu Thr Val Phe Arg Pro Leu Ser Asp Asn Phe Ser Gly Met Cys
 50 55 60
 Leu Lys Asp Asn Ser Glu His Arg Phe Met Leu Ile Asn Ser Asn Gln
 65 70 75 80
 Pro Arg Gly Arg Gln His Phe Thr Ile Ala His Glu Leu Tyr His Leu
 85 90 95
 Tyr Ile Glu Lys Lys Pro Thr Pro His Lys Cys Asn Pro Gly Cys Ala
 100 105 110
 Ser Lys Asp Pro Ile Glu Gln Cys Ala Asp Met Phe Ala Ser Ser Leu
 115 120 125
 Leu Met Pro Glu Gly Gly Ile Cys Gln Leu Ile Pro Glu Met Glu Leu
 130 135 140
 Lys Thr Lys Asn Ile Ser Met Ala Thr Val Leu Lys Leu Glu His Tyr
 145 150 155 160
 Phe Ser Val Ser Arg Ser Ala Leu Leu Tyr Arg Leu Gln Asn Ile Gly
 165 170 175

Leu Ile Thr Glu Ser Thr Arg Ser Gln Leu Ala Glu Ile Lys Val Lys
 180 185 190
 Tyr Ser Ala Lys Cys Phe Gly Tyr Asp Thr Ala Leu Tyr Glu Pro Ala
 195 200 205
 Asn Glu Gly Leu Val Ile Gly Asp Phe Gly Glu Lys Ala Arg Lys Leu
 210 215 220
 Phe Glu Gln Glu Lys Ile Ser Glu Gly His Tyr Ile Glu Leu Leu His
 225 230 235 240
 Lys Ile Asn Ile Asn Gly Thr Gln Glu Asn Glu Asp Ser Thr Leu Cys
 245 250 255

<210> 7780
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 7780
 Gln Thr Arg Phe Ala Phe Ser Leu Gln Lys Phe Pro Val Leu Glu Asn
 1 5 10 15
 Phe Leu Tyr Gln Glu Glu Arg Lys Val Leu Gln Lys Phe Leu Leu Lys
 20 25 30
 Gln Glu Gln Leu Ile Ala Leu Thr Val Thr Phe Val Ala Asp Phe Ser
 35 40 45
 Thr Lys Lys Arg Phe Ser His Lys Gly Thr Leu Cys Lys Ser Ala Thr
 50 55 60
 Val Pro Ala Ala Val Ile Leu
 65 70

<210> 7781
 <211> 266
 <212> PRT
 <213> B.fragilis

<400> 7781
 His Thr Asn Ser Val Thr Val Asn Leu Leu Phe Thr Gln Thr Asn Leu
 1 5 10 15
 Leu Met Lys Thr Asn Phe Cys Arg Phe Leu Ile Gly Leu Val Ala Phe
 20 25 30
 Val Val Gly Ile Pro Val Met Ala Gln Thr Gly Pro Asp Lys Val Lys
 35 40 45
 Pro Phe Ser His Leu Ser Val Ser Leu Asn Ala Gly Thr Leu Gly Gly
 50 55 60
 Gly Leu Gln Val Ala Ala Pro Leu Asn Asp Tyr Leu Gly Leu Arg Ala
 65 70 75 80
 Gly Phe Ser Leu Leu Lys Phe Lys Cys Asn Tyr Asp Tyr Asp Gly Ile
 85 90 95
 Arg Asp Asp Gln Leu Ile Gln Asp Ala Gly Thr Arg Thr Gly Tyr Asn
 100 105 110
 Pro Asp Lys Tyr Tyr Thr Val Pro Leu Lys Ala Lys Ala Asn Met Thr
 115 120 125
 Asn Gly Met Leu Leu Leu Asp Tyr Phe Pro Phe Lys Arg Ser Val Phe
 130 135 140
 His Val Thr Ala Gly Leu Leu Phe Gly Thr Ser Ser Ile Leu Lys Val
 145 150 155 160
 Ser Gly Gln Thr Asp Glu Arg Ile Glu Val Gly Asp Ile Ile Ile Glu
 165 170 175
 Pro Gly Ala Asp Gly Arg Val Glu Ala Leu Lys Thr Asn Ala Val
 180 185 190
 Lys Pro Tyr Val Gly Ile Gly Phe Gly Arg Ser Val Ala His Ser Arg

195	200	205
Val Gly Phe Lys Phe Glu Leu Gly Ala Met Phe His Gly Asn Pro Lys		
210	215	220
Ile Glu Ala Thr Thr Gly Lys Ile Val Glu Glu Ala Ile Asp Gln Asp		
225	230	235
Leu Ser Arg Phe Asn Lys Phe Leu Lys Asn Phe Lys Ala Tyr Pro Val		
245	250	255
Leu Asn Phe Gln Leu Ser Tyr Arg Ile Phe		
260	265	

<210> 7782

<211> 352

<212> PRT

<213> B.fragilis

<400> 7782

Pro Ile Leu Ser Glu Lys Lys Tyr Ile Cys Phe Arg Lys Ser Thr Leu		
1	5	10
Gln Phe Met Lys Leu Gln Lys Ile Tyr Arg Gln Leu Trp Met Glu Val		
20	25	30
His Pro Arg Leu Gln Ser Ala Asp Thr Asp Gln Trp Tyr Val Asp Phe		
35	40	45
Ala Asn Arg Leu Leu Pro Leu Phe Glu Lys Ser Glu Leu Thr Gly Gln		
50	55	60
Met Ile His Lys Asn Arg Ala Val Leu Tyr Phe Thr Trp Tyr Leu Glu		
65	70	75
Asp Cys Val Asn Asn Ser Gly Gly Trp Asn Lys Phe Ile Arg Leu His		
85	90	95
Lys Arg Leu Tyr Gly Arg Phe Leu Pro Phe Tyr Thr Leu Thr Gly Ala		
100	105	110
Tyr Ala Asp Asp Glu Ile Asn Phe Glu Asp Val Ser Phe Leu Leu Trp		
115	120	125
Ser Leu Leu Ser Pro Val Thr Asp Asp Ser Pro Val Pro Trp Asn Pro		
130	135	140
Thr Asp Lys Ser Leu Leu Arg Leu Ala Thr Asp Ile Tyr Ala Leu Leu		
145	150	155
Glu Ala His Phe Glu Gln Ala Pro Leu Thr Asp Asp Glu Ser Met Asp		
165	170	175
Trp Leu Pro Glu Ile Arg Ala Leu Leu Pro Pro Pro Gly Pro Val Leu		
180	185	190
Asp Ile Phe Pro Glu Met Glu Leu Pro His Asp Val Thr Lys Phe Leu		
195	200	205
Asn Ala Thr Gln Gly Lys Gln Leu Val Tyr Phe Glu Asp Tyr Ala Gly		
210	215	220
Leu Arg Arg Phe Cys Val Asp Ala Leu Glu Trp Ala Asp Glu Asp Asp		
225	230	235
Ser Leu Met Pro Glu Leu Ala Asp Glu Glu Asn Phe Val Phe Phe Ala		
245	250	255
Asn Pro Lys Gly Ile Leu Leu Ala Pro Asn Ile Gly Ala Cys Phe Arg		
260	265	270
Asp Glu Arg Asn Ser Thr Tyr Asn Pro Gly Ile Ala Glu Gln Glu Gly		
275	280	285
Ala Glu Leu Phe Tyr Val Pro Gly Leu Cys Pro Ile Asp Leu Leu His		
290	295	300
Tyr Ala Met Gln His Asp Leu Leu Ser Glu Val Thr Phe Pro Phe Glu		
305	310	315
Asp Gly Arg Arg Val Leu His Glu Asn Trp Asp Phe Ile Ala Arg Arg		
325	330	335
Tyr Leu Gly Lys Tyr Tyr Asn Glu Asp Phe Tyr Glu Glu Glu Arg Lys		

Phe Asn Met Arg Ile Asn Asn Pro Ala Leu Thr Ala Gln Val Leu Val
 260 265 270
 Cys Val Ala Arg Ala Ser Met Lys Gln Gln Pro Gly Cys Tyr Thr Met
 275 280 285
 Val Glu Val Val Pro Val Ile Asp Leu Leu Pro Gly Asp Arg Glu Glu Trp
 290 295 300
 Ile Gly His Leu Val
 305

<210> 7785
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 7785
 Ile Met Asn Pro Thr Glu Arg Ile Thr Thr Pro His Lys Thr Gly Glu
 1 5 10 15
 Ala Lys Val Ile Ile Phe Ser Ala Pro Ser Gly Ser Gly Lys Ser Thr
 20 25 30
 Ile Ile Asn Tyr Leu Leu Ala Gln Lys Leu Asn Leu Ala Phe Ser Ile
 35 40 45
 Ser Ala Thr Ser Arg Pro Pro Arg Gly Asn Glu Lys His Gly Val Glu
 50 55 60
 Tyr Phe Phe Leu Ser Pro Asp Glu Phe Arg Gln Arg Ile Ala Asn Asn
 65 70 75 80
 Glu Phe Leu Glu Tyr Glu Glu Val Tyr Thr Asp Arg Phe Tyr Gly Thr
 85 90 95
 Leu Lys Ala Gln Val Glu Lys Gln Leu Ala Thr Gly Gln Asn Val Val
 100 105 110
 Phe Asp Val Asp Val Val Gly Gly Cys Asn Ile Lys Lys Tyr Tyr Gly
 115 120 125
 Glu Arg Ala Leu Ser Leu Phe Ile Gln Pro Pro Cys Ile Asp Glu Leu
 130 135 140
 Arg Arg Arg Leu Ile Gly Arg Gly Thr Asp Thr Pro Glu Val Ile Glu
 145 150 155 160
 Ser Arg Ile Ala Lys Ala Glu Tyr Glu Leu Ser Phe Ala Pro Lys Phe
 165 170 175
 Asp Lys Val Ile Ile Asn Asp Asp Leu Glu Thr Ala Lys Ala His Ala
 180 185 190
 Leu Lys Val Ile Lys Glu Phe Leu Gly Ile Asp Thr Glu
 195 200 205

<210> 7786
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 7786
 Leu Pro Gly Pro Ile Ala Thr Leu Val Thr Ala Pro Ala Ala Gly Tyr
 1 5 10 15
 Leu Val Glu Arg Ile His Pro Gly Ile Leu Gly Ser Ile Gly Met Ala
 20 25 30
 Leu Phe Cys Ile Gly Leu Tyr Ser Leu Ser Thr Leu Thr Ala Asp Ser
 35 40 45
 Ser Val Thr Gly Ile Ile Leu Arg Leu Met Leu Cys Gly Ala Gly Phe
 50 55 60
 Gly Leu Phe Gln Thr Pro Asn Asn Ser Thr Ile Ile Ser Ser Ala Pro
 65 70 75 80
 Thr Arg Arg Ser Gly Gly Ala Ser Gly Met Leu Gly Met Ala Arg Leu

			85						90					95			
Leu	Gly	Gln	Thr	Phe	Gly	Thr	Thr	Leu	Val	Ala	Leu	Leu	Phe	Ser	Phe		
			100						105					110			
Val	Val	His	Glu	Lys	Ser	Thr	Ala	Val	Cys	Leu	Ile	Ala	Gly	Ser	Gly		
		115					120					125					
Phe	Ala	Phe	Val	Ala	Ala	Val	Val	Ser	Ser	Met	Arg	Leu	Ser	Gln	Pro		
	130						135				140						
Ser	Thr	Leu	Lys	Thr	Lys	Pro	Arg										
145					150												

<210> 7787

<211> 819

<212> PRT

<213> B.fragilis

<400> 7787

Val	Arg	Arg	Pro	Ala	Glu	Lys	Val	Asn	Ile	Leu	Lys	Lys	Asn	Leu	Lys		
1				5				10						15			
Leu	Ser	Gly	Val	Lys	Val	Met	Asn	Tyr	Ala	Glu	Ile	Cys	Ile	Ile	Lys		
			20					25					30				
Arg	Asp	Gly	Lys	Arg	Glu	Asp	Phe	Ser	Ile	Ser	Lys	Ile	Lys	Asn	Ala		
		35					40					45					
Val	Ser	Lys	Ala	Phe	Ser	Ala	Thr	Gly	Ile	Asn	Asp	Glu	Gln	Gln	Leu		
	50					55				60							
Ile	Ala	Asp	Ile	Thr	Met	Asn	Val	Ile	Gly	Gln	Phe	Ala	Ser	Pro	Thr		
65					70				75						80		
Ile	Thr	Val	Glu	Glu	Ile	Gln	Asp	Leu	Val	Glu	Lys	Glu	Leu	Met	Lys		
				85				90						95			
Val	Arg	Pro	Glu	Val	Ala	Lys	Lys	Tyr	Ile	Ile	Tyr	Arg	Glu	Trp	Arg		
			100					105					110				
Asn	Thr	Glu	Arg	Asp	Lys	Lys	Thr	Gln	Met	Lys	His	Val	Met	Asp	Gly		
		115					120					125					
Ile	Val	Ala	Ile	Asp	Lys	Asn	Asp	Val	Asn	Leu	Ser	Asn	Ala	Asn	Met		
	130					135					140						
Ser	Ser	His	Thr	Pro	Ala	Gly	Gln	Met	Met	Thr	Phe	Ala	Ser	Glu	Val		
145					150					155					160		
Thr	Lys	Asp	Tyr	Thr	Tyr	Lys	Tyr	Leu	Leu	Pro	Lys	Arg	Phe	Ala	Glu		
				165				170							175		
Ala	His	Gln	Leu	Gly	Asp	Ile	His	Ile	His	Asp	Leu	Asp	Tyr	Tyr	Pro		
		180						185					190				
Thr	Lys	Thr	Thr	Thr	Cys	Ile	Gln	Tyr	Asp	Met	Asp	Asp	Leu	Phe	Glu		
		195					200					205					
Arg	Gly	Phe	Arg	Thr	Lys	Asn	Gly	Ser	Ile	Arg	Thr	Pro	Gln	Ser	Ile		
	210					215					220						
Gln	Ser	Tyr	Ala	Thr	Leu	Ala	Thr	Ile	Ile	Phe	Gln	Thr	Asn	Gln	Asn		
225					230					235					240		
Glu	Gln	His	Gly	Gly	Gln	Ala	Ile	Pro	Ala	Phe	Asp	Phe	Phe	Met	Ala		
			245					250						255			
Lys	Gly	Val	Ser	Lys	Ser	Phe	Arg	Lys	His	Leu	Ala	Ser	Phe	Ile	Ser		
		260						265					270				
Phe	Tyr	Val	Gln	Met	Asn	Lys	Gly	Glu	Glu	Ile	Glu	Glu	Lys	Ala	Ile		
	275					280						285					
Arg	Thr	Val	Ile	Ala	Glu	His	Leu	Ser	Ser	Ile	Lys	Ala	Ser	Glu	Leu		
	290					295					300						
Glu	Arg	Glu	Thr	Leu	Arg	Met	Ala	Leu	Thr	Ala	Leu	Gln	Ile	Asn	Ile		
305				310						315					320		
Asp	Lys	Glu	His	Leu	Asn	Gln	Ile	Ile	Glu	Lys	Ala	Phe	Val	Gln	Thr		
			325					330						335			
Gln	Lys	Asp	Thr	His	Gln	Ala	Met	Glu	Gly	Phe	Ile	His	Asn	Leu	Asn		

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			340					345					350				
Thr	Met	His	Ser	Arg	Gly	Gly	Asn	Gln	Val	Val	Phe	Ser	Ser	Ile	Asn		
		355					360					365					
Tyr	Gly	Thr	Asp	Thr	Ser	Ala	Glu	Gly	Arg	Met	Val	Ile	Glu	Glu	Leu		
	370					375					380						
Leu	Lys	Ala	Thr	Val	Glu	Gly	Leu	Gly	Thr	Arg	Gly	Glu	Val	Pro	Val		
385					390					395					400		
Phe	Pro	Ile	Gln	Ile	Phe	Lys	Ile	Lys	Asn	Gly	Val	Ser	Tyr	Thr	Glu		
			405						410					415			
Ala	Asp	Tyr	Glu	Lys	Ala	Met	Ala	Asn	Phe	Asp	Ala	Ala	Met	Glu	Gly		
		420						425					430				
Lys	Leu	Lys	Phe	Glu	Ala	Pro	Asn	Phe	Asp	Leu	Phe	Leu	Lys	Ala	Cys		
		435					440					445					
His	Thr	Thr	Ala	Lys	Ala	Leu	Phe	Pro	Asn	Tyr	Met	Phe	Leu	Asp	Ala		
	450					455					460						
Pro	Phe	Lys	Gln	His	Glu	Gln	Trp	Asp	Ala	Asn	Asp	Pro	Gln	Arg	Tyr		
465					470					475				480			
Arg	Tyr	Glu	Leu	Ala	Thr	Met	Gly	Cys	Arg	Thr	Arg	Val	Ser	Glu	Asn		
			485					490						495			
Val	Ala	Gly	Glu	Lys	Ser	Ser	Leu	Gly	Arg	Gly	Asn	Leu	Ser	Phe	Thr		
		500						505					510				
Thr	Leu	Asn	Met	Pro	Arg	Leu	Ala	Ile	Glu	Ala	Arg	Ile	Lys	Ala	Glu		
		515					520					525					
Asn	Met	Thr	Glu	Asp	Gly	His	Asn	Lys	Asp	Ala	Val	Glu	Arg	Lys	Ala		
	530					535					540						
Lys	Glu	Ile	Phe	Ile	Glu	Ser	Ile	His	Glu	Thr	Ala	Thr	Leu	Ile	Ala		
545					550					555				560			
Glu	Gln	Leu	Tyr	Glu	Arg	Tyr	Gln	Tyr	Gln	Arg	Thr	Ala	Leu	Ala	Arg		
			565						570					575			
Gln	Phe	Pro	Phe	Met	Met	Gly	Asn	Asp	Val	Trp	Lys	Gly	Gly	Ala	Ala		
			580					585					590				
Leu	Asn	Pro	Asn	Glu	Gln	Val	Gly	Asp	Val	Leu	Arg	Ser	Gly	Thr	Leu		
		595					600					605					
Gly	Ile	Gly	Phe	Leu	Gly	Gly	His	Asn	Ala	Met	Val	Ala	Leu	Tyr	Gly		
	610					615					620						
Glu	Gly	His	Gly	His	Ser	Gln	Lys	Ala	Trp	Asp	Thr	Leu	Tyr	Glu	Ala		
625					630					635				640			
Val	Leu	Glu	Ile	Asn	Lys	Val	Ala	Asp	Glu	Tyr	Lys	Ala	Lys	Tyr	Asn		
			645						650					655			
Leu	Asn	Tyr	Ser	Val	Leu	Ala	Thr	Pro	Ala	Glu	Gly	Leu	Ser	Gly	Arg		
		660					665					670					
Phe	Thr	Arg	Met	Asp	Arg	Arg	Lys	Tyr	Gly	Lys	Ile	Lys	Gly	Val	Thr		
		675					680					685					
Asp	Asn	Asp	Tyr	Tyr	Val	Asn	Ser	Phe	His	Val	Asp	Val	Lys	Glu	Pro		
	690					695					700						
Ile	Ser	Ile	Val	Glu	Lys	Ile	Lys	Arg	Glu	Ala	Pro	Phe	His	Ala	Ile		
705					710					715				720			
Thr	Arg	Gly	Gly	His	Ile	Thr	Tyr	Val	Glu	Leu	Asp	Gly	Glu	Ala	Gln		
			725						730					735			
Lys	Asn	Val	Arg	Ala	Ile	Ala	Lys	Ile	Val	Lys	Val	Met	Phe	Asp	Glu		
		740					745						750				
Gly	Ile	Gly	Tyr	Gly	Ser	Ile	Asn	His	Pro	Val	Asp	Thr	Cys	His	Asn		
		755					760					765					
Cys	Gly	Tyr	Lys	Gly	Val	Ile	Tyr	Asp	Lys	Cys	Pro	Val	Cys	Gln	Ser		
	770					775					780						
Glu	Asn	Ile	Leu	Arg	Met	Arg	Arg	Ile	Thr	Gly	Tyr	Leu	Thr	Gly	Asp		
785					790					795				800			
Leu	Ser	Ser	Trp	Asn	Ser	Ala	Lys	Arg	Ala	Glu	Glu	Lys	Asp	Arg	Val		
			805						810					815			

Lys His Gly

<210> 7788

<211> 481

<212> PRT

<213> B.fragilis

<400> 7788

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Tyr Phe Thr Phe Leu Ile Val Tyr Met Ser Glu Ile Ser Val Thr Lys
1          5          10          15
Lys Asp Ile Ile Trp Gly Tyr Leu Ala Gln Phe Phe Leu Val Ala Ser
          20          25          30
Gly Leu Ile Thr Leu Pro Leu Val Leu Asn Ile Leu Ser Ala Glu Glu
          35          40          45
Ile Gly Met Asn Tyr Leu Met Leu Thr Ile Gly Ser Leu Val Ser Leu
          50          55          60
Leu Asp Phe Gly Phe Ala Pro Gln Phe Gly Arg Asn Ile Thr Tyr Ile
65          70          75          80
Phe Ser Gly Ala Gln Lys Leu Gln Lys Glu Gly Ile Ser Thr Glu Lys
          85          90          95
Gly Asp Leu Asn Tyr Lys Leu Leu Ala Thr Met Ile Ser Ala Ala Lys
          100          105          110
Leu Ile Tyr Lys Val Met Ala Val Val Leu Val Ile Met Leu Thr
          115          120          125
Leu Gly Thr Val Tyr Ile Tyr Lys Ala Thr Met Gly Phe Thr Ser Val
          130          135          140
Lys Tyr Ala Leu Leu Ile Trp Val Ile Tyr Ser Ile Ser Ala Phe Phe
145          150          155          160
Ala Ile Tyr Tyr Thr Tyr Tyr Thr Ser Leu Leu Met Gly Lys Gly Leu
          165          170          175
Ile Met Glu Ser Lys Lys Ala Met Leu Ala Ser Arg Ile Thr Cys Ile
          180          185          190
Leu Leu Thr Phe Ile Phe Leu Phe Met Gly Trp Gly Leu Leu Gly Ile
          195          200          205
Ala Val Ala Asn Leu Leu Ala Pro Phe Val Asn Arg Tyr Phe Ser Tyr
210          215          220
Arg Tyr Phe Phe Val Pro Glu Leu Arg Asn Lys Ile Glu Asn Tyr Tyr
225          230          235          240
Val Asn Arg Lys Glu Lys Trp Glu Ile Phe Ser Ile Ile Trp Tyr Asn
          245          250          255
Ala Lys Lys Leu Gly Met Val Phe Ile Gly Asn Tyr Ala Ile Ser Lys
          260          265          270
Leu Ser Leu Phe Leu Ala Gly Leu Tyr Leu Ser Leu Gln Glu Ile Ala
          275          280          285
Ser Tyr Gly Leu Met Ile Gln Leu Val Thr Val Leu Thr Val Ser Ser
          290          295          300
Val Thr Leu Phe Thr Ile Ser Glu Pro Tyr Leu Ile Ser Leu Arg Ile
305          310          315          320
Glu Gly Lys Arg Ser Glu Leu Leu Lys Arg Phe Ser Phe Thr Met Asn
          325          330          335
Val Tyr Tyr Cys Leu Phe Ile Ile Gly Ser Leu Phe Leu Ile Ile Leu
          340          345          350
Ala Pro Leu Leu Glu Phe Ile Gly Ser Asn Thr Lys Leu Pro Ser
          355          360          365
Thr Tyr Ile Leu Thr Leu Tyr Cys Phe Val Ile Phe Leu Glu Asn Asn
          370          375          380
Asn Cys Asn Phe Ser Thr Phe Ile Leu Leu Asp Asn Lys Ile Pro Phe
385          390          395          400

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116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

Met Trp Pro Ser Leu Cys Thr Gly Val Phe Ile Ile Met Gly Asp Phe
 405 410 415
 Leu Ile Leu Gln Tyr Thr Ser Phe Ala Leu Gly Gly Leu Ile Met Val
 420 425 430
 Gln Leu Ile Cys Gln Ser Ala Tyr Val Asn Trp Arg Trp Ile Tyr Val
 435 440 445
 Val Cys Arg Asp Phe Lys Ile Ser Phe Ser Ser Phe Leu Ala Leu Gly
 450 455 460
 Leu Lys Glu Thr Phe Asn Lys Ile Arg Leu Ser Leu Phe Met Leu Lys
 465 470 475 480
 Tyr

<210> 7789

<211> 94

<212> PRT

<213> B.fragilis

<400> 7789

Trp Gly Ile Thr Gly Thr Thr Ser Met Ile Met Leu Met Lys Arg Arg
 1 5 10 15
 Lys Glu Thr Met Tyr Arg Leu Phe Leu Ile Leu Asn Leu Asp Tyr Cys
 20 25 30
 Glu Ala Lys Ile Val Tyr His Trp Ile Lys Asn Lys Gln Cys Tyr Leu
 35 40 45
 Lys Asn Lys Lys Thr Asp Ala Ser Tyr Phe Leu Pro Arg Ser Ile Thr
 50 55 60
 Glu Pro Phe Phe Val Asn Asp Gln Arg Leu Lys Ile Asp Ser Met Leu
 65 70 75 80
 Leu Cys Val Leu Cys Gly Glu Phe Arg His Thr Cys Leu Lys
 85 90

<210> 7790

<211> 334

<212> PRT

<213> B.fragilis

<400> 7790

Tyr Val Asn Ala Met Thr Thr Pro Thr Val Ser Phe Ile Ile Pro Val
 1 5 10 15
 Tyr Asn Val Asp Lys Tyr Leu Ser Gln Cys Ile Glu Ser Ile Leu Val
 20 25 30
 Gln Ser Tyr Arg Asn Phe Glu Ile Ile Leu Val Asn Asp Gly Ser Ile
 35 40 45
 Asp Asn Ser Pro Tyr Leu Cys Asp Ile Tyr Gln Ser Lys Asp Glu Arg
 50 55 60
 Val Lys Thr Val His Lys Lys Asn Gly Gly Leu Ser Asp Ala Arg Asn
 65 70 75 80
 Val Gly Leu Thr Leu Ala Lys Gly Glu Tyr Ile Ile Phe Leu Asp Ser
 85 90 95
 Asp Asp Phe Trp Ile Ser Gln Asn Asp Leu Gln Leu Leu Val His Arg
 100 105 110
 Leu Asp Ser Leu Ile Asn Cys Asp Phe Met Cys Phe Asn Cys Cys Tyr
 115 120 125
 Tyr Tyr Pro Ser Lys His Leu Phe Lys Arg Trp Thr Pro Phe Ala Asp
 130 135 140
 Glu Leu Leu Leu Ser Val Asp Lys Ser Lys Ser Ile Ile Ser Leu Val
 145 150 155 160
 Ser Ser Gly Thr Phe Pro Met Ser Ala Cys Leu Lys Ile Ile Arg Arg

				165					170					175	
Asn	Phe	Leu	Leu	Glu	Asn	Asn	Ile	Thr	Phe	Gln	Lys	Gly	Ile	Gln	Ser
			180						185					190	
Glu	Asp	Ile	Leu	Trp	Phe	Met	Glu	Leu	Leu	Glu	Lys	Ala	His	Ser	Ile
		195					200					205			
Ala	Phe	Leu	Asn	Gln	Tyr	Ile	Tyr	Ala	Tyr	Arg	Arg	Glu	Val	Glu	Asn
	210					215					220				
Ser	Ile	Thr	Ser	Ser	Phe	Thr	Pro	Lys	Lys	Tyr	Asn	Asp	Leu	Phe	Ser
	225					230					235				240
Val	Leu	Glu	Asn	Gly	Ile	Gln	Arg	Ile	Glu	Ala	Tyr	Lys	Trp	Asp	Ile
				245					250					255	
Gln	Thr	Lys	Asn	Ala	Leu	Leu	Ser	Phe	Met	Ala	Tyr	Glu	Tyr	Cys	Thr
			260					265						270	
Leu	Leu	Ala	Phe	Leu	Tyr	Tyr	Phe	Pro	Phe	Ala	Leu	Arg	Lys	Glu	Leu
		275					280					285			
Glu	Gly	Lys	Leu	Phe	Gln	Tyr	Asn	Trp	Leu	Leu	Lys	Tyr	Lys	Leu	Asn
	290					295					300				
Pro	Lys	Val	Lys	Lys	Val	Ser	Phe	Cys	Met	Arg	Phe	Leu	Gly	Lys	Arg
	305				310					315					320
Leu	Thr	Leu	Leu	Leu	Leu	Tyr	Arg	Tyr	Met	Lys	Asn	Leu	Val		
			325						330						

<210> 7791
 <211> 96
 <212> PRT
 <213> B.fragilis

Thr	Val	Ile	Ala	Ile	Glu	Val	Asn	Ile	Ser	Ile	Met	Arg	Ala	Phe	Val
1				5					10					15	
Ala	Val	Arg	Gln	Leu	Val	Ser	Ala	Leu	Pro	Val	Asn	Asp	Ile	Thr	Arg
			20					25					30		
Leu	Gln	Asp	Glu	Ile	Lys	Glu	Leu	Lys	Glu	Tyr	Val	Glu	Ala	Ala	Phe
		35				40						45			
Ala	Asp	Tyr	Asn	Asp	Ile	Asn	Glu	Asp	Thr	Arg	Met	Gln	Leu	Glu	Leu
	50				55						60				
Ile	Asn	Gln	Ala	Ile	Ala	Glu	Leu	Gln	Ala	Lys	Asp	Lys	Gln	Ala	Gly
	65				70					75					80
Gly	Lys	Thr	Arg	Asn	Pro	Ile	Gly	Phe	Ile	Ser	Tyr	Asn	Lys	Glu	Lys
				85					90					95	

<210> 7792
 <211> 118
 <212> PRT
 <213> B.fragilis

Tyr	Asn	Leu	Tyr	Tyr	Leu	Cys	Val	Met	Lys	Lys	Ile	Ile	Thr	Tyr	Lys
1				5					10					15	
Asn	Tyr	Phe	Ala	Glu	Phe	Met	Asp	Lys	Leu	Ser	Glu	Leu	Glu	Arg	Lys
			20					25					30		
Lys	Ile	Gln	Arg	Ala	Leu	Ser	Leu	Phe	Lys	Ala	Glu	Asp	Lys	Ile	Pro
		35				40						45			
Ser	His	Tyr	Ile	Lys	Phe	Ile	Arg	Asp	Gly	Val	Tyr	Glu	Phe	Arg	Val
	50				55						60				
Ala	Cys	Gly	Asn	Asn	Glu	Leu	Arg	Ile	Phe	Phe	Ile	Tyr	Asp	Gly	Glu
	65				70					75					80
Asn	Val	Val	Val	Leu	Phe	Asn	Cys	Phe	Arg	Lys	Lys	Thr	Gln	Lys	Thr
				85					90					95	

Pro Asp Asn Glu Ile Lys Lys Ala Ile Asn Leu Lys Lys Glu Tyr Tyr
 100 105 110
 Glu Ala Lys Gly Asn Lys
 115

<210> 7793
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 7793
 Ser Met Ile Leu Ser Ser Leu Val His Thr Asp Phe Gln Pro Tyr Leu
 1 5 10 15
 Leu Pro Asn Thr Asp Ala Trp Ala Leu Pro Arg Asp Lys Ala Leu Glu
 20 25 30
 Leu Leu Val Tyr Leu Lys Gln Gln Gly Val Arg Gln Ile Tyr Cys Val
 35 40 45
 Pro Pro Val Lys Val Glu Asn Glu Gly Asn Ala Phe Ser Phe Leu Lys
 50 55 60
 Asp Ala Phe Gln Tyr Leu Gln Gln Gln Tyr Ser Gly Asn Ile Ser Leu
 65 70 75 80
 Arg Leu Ser Ala Arg Tyr Arg Leu Asp Glu Gly Phe Pro Ala Leu Leu
 85 90 95
 Glu Lys Gly Asp Leu Leu Thr Ile Gly Gly Gly Lys Glu Leu Leu Val
 100 105 110
 Asp Val Ser Pro Leu Gln Gln Pro Glu Gly Leu Ser Glu Met Ile His
 115 120 125
 Ala Ile Cys Arg Ser Gly Tyr Ile Pro Val Leu Met Gln Pro Glu Arg
 130 135 140
 Ser Leu Tyr Trp Gly Thr Glu Asp Tyr Leu His Leu Arg Glu Ser Gly
 145 150 155 160
 Cys Arg Leu Met Leu Asn Leu Tyr Ser Leu Phe Gly Tyr Asn Gly Asp
 165 170 175
 Gly Ala Leu Asn Tyr Ser Arg Met Leu Leu Arg Lys Glu Trp Tyr Thr
 180 185 190
 Tyr Leu Cys Ser Gly Arg Glu Asp Thr Lys Val Met Arg Tyr Gly Glu
 195 200 205
 Ser Phe Ser Ile Glu Asp Asp Asp Leu Ala Met Lys Leu Gln Glu
 210 215 220
 Ile Glu Arg Asn Ser Arg Leu Leu Trp Ser Ala Thr Glu Asn Gly
 225 230 235

<210> 7794
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 7794
 Asn Lys Gln Tyr Thr Arg Ile Tyr Arg Asn Ile His Ile Arg Thr Thr
 1 5 10 15
 Asn Phe Ala Phe Val Ile Lys Lys Leu Ile Arg Arg Asn Glu Gln Lys
 20 25 30
 Lys Pro Asn Glu Gly Val Val Leu Asn Met Gly Asn Thr Pro Tyr Val
 35 40 45
 Val Ile Val Asn Glu Lys Ser Asp Glu Gly Gln Lys Val Leu Glu Ala
 50 55 60
 Leu Glu Glu Asn Ile Glu Lys Met Asp Ile Gly Ser His Arg Glu Leu
 65 70 75 80
 Val Ile Phe Phe Phe Val Trp Leu Asn His Gln Gln Lys Asp Pro Lys

				85					90					95			
Lys	Arg	Lys	Asn	Ile	Arg	Glu	Leu	Ala	Lys	Ile	Met	His	Arg	Ser	Leu		
			100					105						110			
Phe	Phe	Gly	Gln	Lys	His	Asn	Ser	Asn	Glu	Glu	Met	Lys	Pro	Asp	Ser		
		115					120						125				
Ile	Glu	Thr	Glu	Ile	Phe	Lys	Ile	Leu	Arg	Ile	Leu	Lys	Ser	Met	Lys		
	130					135					140						
Lys	Ala	Glu	Asp	Lys	Asp	Leu	Ile	Ile	Asn	Leu	Leu	Asp	Asp	Ile	Ser		
145					150					155					160		
Leu	Phe	Leu	Asp	Glu	Asn	Val											
				165													

<210> 7795

<211> 185

<212> PRT

<213> B.fragilis

<400> 7795

Asp	Trp	Leu	His	Leu	His	Gln	Phe	Met	Asn	Phe	Thr	Ala	Met	Asp	Ile		
1				5					10					15			
Thr	Leu	Arg	Thr	Leu	Thr	Glu	Asn	Asp	Leu	Pro	Phe	Val	Lys	Asp	Ile		
			20					25					30				
Tyr	Asp	Tyr	Tyr	Thr	Leu	His	Thr	Thr	Val	Val	Tyr	Phe	Val	His	Cys		
		35					40					45					
Ala	Ser	Ile	Asp	Glu	Leu	Lys	Asn	Tyr	Ile	Pro	Val	Gly	Asp	Pro	Val		
	50					55					60						
Tyr	Arg	Ser	Phe	Ile	Ile	Glu	Thr	Pro	Glu	Gly	Ala	Pro	Cys	Gly	Phe		
65					70					75					80		
Cys	Tyr	Phe	Ala	Arg	Phe	Lys	Pro	Arg	Glu	Ala	Phe	Arg	Ile	Ser	Val		
				85					90					95			
Glu	Leu	Thr	Leu	Tyr	Leu	Lys	Pro	Glu	Phe	Thr	Gly	Arg	Gly	Tyr	Gly		
			100					105					110				
Lys	Gln	Ala	Ile	Leu	Arg	Leu	Glu	Glu	Ile	Ile	Arg	Gln	Glu	Gly	Phe		
		115					120					125					
Ser	Asn	Ile	Met	Ala	Leu	Ile	Ser	Gly	Glu	Asn	Glu	Ala	Ser	Ile	Arg		
		130				135					140						
Leu	Phe	Glu	Lys	Cys	Gly	Phe	Glu	Cys	Cys	Ala	Asn	Ile	Arg	Gln	Val		
145					150					155					160		
Ala	Glu	Lys	Phe	Gly	Lys	Lys	Leu	Asp	Leu	Arg	Met	Tyr	Gln	Lys	Ile		
				165					170					175			
Ile	Ser	Asp	Asn	Ser	His	Leu	Thr	Pro									
			180					185									

<210> 7796

<211> 60

<212> PRT

<213> B.fragilis

<400> 7796

His	Ser	Val	Lys	Thr	Cys	Ser	Leu	Asp	Val	Asn	Lys	Lys	Phe	Phe	Lys		
1				5					10					15			
Cys	Lys	Arg	Leu	Val	Ile	Cys	Ala	Gln	Glu	Pro	Asp	Asn	Leu	Gln	Lys		
			20					25					30				
Ala	Leu	Thr	Met	Leu	Ile	Glu	Glu	Arg	Tyr	Lys	Asp	Glu	Asp	Thr	Gly		
		35				40						45					
Ser	Asn	Gly	Val	Asn	Ser	Leu	Pro	Lys	Leu	Glu	Leu						
50						55					60						

<210> 7797

<211> 370
 <212> PRT
 <213> B.fragilis

<400> 7797

Leu Lys Thr Lys Ser Leu Ile Asp Met Lys Pro Tyr Leu Leu Leu Thr
 1 5 10 15
 Pro Gly Pro Leu Thr Thr Ser Glu Thr Val Lys Glu Thr Met Met Thr
 20 25 30
 Asp Trp Cys Thr Trp Asp Glu Asp Tyr Asn Leu His Ile Val Glu Ala
 35 40 45
 Leu Arg Lys Glu Leu Val Gly Ile Ala Thr Arg Asn Thr Glu Glu Tyr
 50 55 60
 Thr Ser Val Leu Leu Gln Gly Ser Gly Thr Tyr Cys Val Glu Ala Val
 65 70 75 80
 Ile Gly Ala Ala Ile Gly Lys Asn Asp Lys Leu Leu Ile Cys Ser Asn
 85 90 95
 Gly Ala Tyr Gly Asp Arg Met Gly Asn Ile Ala Glu Tyr Tyr His Ile
 100 105 110
 Asp Tyr Glu Leu Leu Ala Phe Asp Glu Thr Glu Gln Val Ser Val Asp
 115 120 125
 Tyr Val Asp Asp Tyr Leu Ser Asn Asn Ser Asp Val Thr His Val Ala
 130 135 140
 Phe Val His Cys Glu Thr Thr Gly Ile Leu Asn Pro Leu Lys Glu
 145 150 155 160
 Leu Ala His Val Val Lys Met His Gly Lys Lys Leu Ile Val Asp Ala
 165 170 175
 Met Ser Ser Phe Gly Gly Ile Pro Met Asp Val Ser Glu Leu Gly Ile
 180 185 190
 Asp Phe Leu Ile Ser Ser Ala Asn Lys Cys Ile Gln Gly Val Pro Gly
 195 200 205
 Phe Gly Phe Ile Ile Ala Arg Arg Ser Glu Leu Val Arg Cys Lys Gly
 210 215 220
 Val Ala Arg Ser Leu Ser Leu Asp Ile Tyr Asp Gln Trp Glu Thr Met
 225 230 235 240
 Glu Lys Gly His Gly Lys Trp Arg Phe Thr Ser Pro Thr His Val Val
 245 250 255
 Arg Ala Phe Lys Gln Ala Leu Thr Glu Leu Ile Glu Glu Gly Gly Val
 260 265 270
 Glu Ala Arg His Arg Arg Tyr Cys Glu Asn His Arg Val Leu Val Glu
 275 280 285
 Gly Met Arg Ser Leu Gly Phe Val Thr Leu Leu Asp Asp Ala Ile Gln
 290 295 300
 Ser Pro Ile Ile Thr Ser Phe Leu Tyr Pro Lys Thr Gly Phe Asp Phe
 305 310 315 320
 Lys Ala Phe Tyr Thr Ala Leu Lys Ser Lys Gly Phe Val Ile Tyr Pro
 325 330 335
 Gly Lys Ile Ser Lys Ala Asp Thr Phe Arg Ile Gly Asn Ile Gly Asp
 340 345 350
 Val His Pro Glu Asp Phe Ala Arg Leu Val Glu Val Val Arg Glu Thr
 355 360 365
 Glu Tyr
 370

<210> 7798
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 7798

Val Phe Ala Lys Ser Ser Asn His Ser Pro Pro Lys Pro Gly Ser Ser
 1 5 10 15
 Thr Arg Tyr His Gln Glu Ile Asn Asp Tyr Leu Leu Met Ile Ser Glu
 20 25 30
 Val Thr Pro Ile Leu Phe Gln Arg Ser Ala Lys Leu Leu Ile Tyr Thr
 35 40 45
 Lys Ser Ala Leu Asp Lys Lys Lys Ala Arg Thr Glu Met Leu Tyr Leu
 50 55 60
 Cys Phe Phe Val Asn
 65

<210> 7799

<211> 388

<212> PRT

<213> B.fragilis

<400> 7799

Gln Ile Asn Lys Ser Ile Ile Lys Asn Met Lys Thr Tyr Leu Val Thr
 1 5 10 15
 Gly Ala Ala Gly Phe Ile Gly Ala Asn Tyr Leu Lys Tyr Ile Leu Ala
 20 25 30
 Lys His Ser Asp Ile Lys Val Val Val Leu Asp Ala Leu Thr Tyr Ala
 35 40 45
 Gly Asn Leu Gly Thr Ile Ala Asn Asp Ile Asp Asn Glu Arg Cys Phe
 50 55 60
 Phe Val Lys Gly Asp Ile Cys Asp Arg Glu Leu Ala Asp Arg Leu Phe
 65 70 75 80
 Gly Glu Tyr Lys Phe Asp Tyr Val Val Asn Phe Ala Ala Glu Ser His
 85 90 95
 Val Asp Arg Ser Ile Glu Asn Pro Gln Leu Phe Leu Met Thr Asn Ile
 100 105 110
 Leu Gly Thr Gln Asn Leu Leu Asp Ala Ala Arg Arg Ala Trp Val Thr
 115 120 125
 Gly Lys Asp Glu Tyr Gly Tyr Pro Thr Trp Arg Lys Gly Val Arg Tyr
 130 135 140
 His Gln Val Ser Thr Asp Glu Val Tyr Ser Ser Leu Gly Ala Glu Ser
 145 150 155 160
 Tyr Phe His Glu Thr Thr Pro Leu Cys Pro His Ser Pro Tyr Ser Ala
 165 170 175
 Ser Lys Asn His Ala Asp Met Val Val Met Ala Tyr His Asp Thr Tyr
 180 185 190
 Lys Met Pro Val Thr Ile Thr Arg Cys Ser Asn Asn Tyr Gly Pro Tyr
 195 200 205
 His Phe Pro Glu Lys Leu Ile Pro Leu Ile Ile Lys Asn Ile Leu Glu
 210 215 220
 Gly Lys Lys Leu Pro Val Tyr Gly Asp Gly Ser Asn Val Arg Asp Trp
 225 230 235 240
 Leu Tyr Val Glu Asp His Cys Lys Ala Ile Asp Leu Val Val Arg Glu
 245 250 255
 Gly Val Glu Gly Glu Val Tyr Asn Val Gly Gly His Asn Glu Lys Thr
 260 265 270
 Asn Leu Glu Ile Val Lys Leu Thr Ile Ala Thr Ile His Arg Leu Met
 275 280 285
 Ala Glu His Pro Glu Tyr Arg Glu Val Leu Lys Lys Lys Glu Lys Asn
 290 295 300
 Ala Asp Gly Glu Ile Ser Ile Asp Trp Ile Asn Glu Asp Leu Ile Thr
 305 310 315 320
 Phe Val Lys Asp Arg Leu Gly His Asp Gln Arg Tyr Ala Ile Asp Pro

325 330 335
 Thr Lys Ile Thr Asn Ala Leu Gly Trp Tyr Pro Glu Thr Lys Phe Glu
 340 345 350
 Val Gly Ile Val Lys Thr Ile Glu Trp Tyr Leu Asn Asn Gln Glu Trp
 355 360 365
 Val Glu Glu Val Thr Ser Gly Asp Tyr Gln Lys Tyr Tyr Glu Arg Met
 370 375 380
 Tyr Ser Lys Arg
 385

<210> 7800
 <211> 456
 <212> PRT
 <213> B.fragilis

<400> 7800

Ile Val Asn Asn Leu Met Glu Thr Phe Leu Ile Arg Ala Leu Gln Leu
 1 5 10 15
 Ile Met Ser Leu Ser Leu Leu Val Ile Ile His Glu Gly Gly His Phe
 20 25 30
 Leu Phe Ala Arg Leu Phe Lys Val Arg Val Glu Lys Phe Cys Leu Phe
 35 40 45
 Phe Asp Pro Trp Phe Thr Leu Phe Lys Phe Lys Pro Lys Lys Ser Glu
 50 55 60
 Thr Glu Tyr Ala Val Gly Trp Leu Pro Leu Gly Gly Tyr Val Lys Ile
 65 70 75 80
 Ala Gly Met Ile Asp Glu Ser Met Asp Thr Glu Gln Met Lys Gln Pro
 85 90 95
 Glu Gln Pro Trp Glu Phe Arg Ser Lys Pro Ala Trp Gln Arg Leu Leu
 100 105 110
 Ile Met Val Gly Gly Val Leu Phe Asn Phe Leu Leu Ala Leu Phe Ile
 115 120 125
 Tyr Ser Met Ile Leu Phe Lys Trp Gly Asp Gln Tyr Ile Pro Val Gln
 130 135 140
 Lys Ala Pro Leu Gly Met Asp Phe Asn Glu Thr Ala Lys Ala Val Gly
 145 150 155 160
 Phe Gln Asp Gly Asp Ile Leu Leu Ser Ala Asp Gly Val Asp Phe Val
 165 170 175
 Arg Tyr Asp Pro Asp Met Leu Ser Gln Ile Ala Asp Ala Arg Glu Val
 180 185 190
 Thr Val Leu Arg Glu Gly Lys Lys Ala Ser Val Tyr Ile Pro Glu Asp
 195 200 205
 Met Met Gln Arg Leu Leu Gly Asp Ser Val Arg Phe Ala Glu Phe Arg
 210 215 220
 Phe Pro Tyr Val Val Asp Ser Val Met Val Asn Ser Pro Ala Ala Met
 225 230 235 240
 Ala Gly Ile Gln Pro Gly Asp Ser Ile Ile Ala Leu Asp Gly Lys Pro
 245 250 255
 Val Ser Tyr Thr Asp Phe Leu Ala Ala Met Ala Glu Arg Arg Gln Asn
 260 265 270
 Ala Lys Ala Leu Gln Asn Asp Ser Ile Asn Pro His Gln Ile Ser Leu
 275 280 285
 Thr Tyr Val Arg Asp Gly Lys Thr Asp Val Leu Thr Leu Thr Thr Asp
 290 295 300
 Ser Ala Phe Lys Ile Gly Val Ala Val Asn Pro Tyr Thr Asp Gln Leu
 305 310 315 320
 Leu Pro Val Ile Arg Lys Glu Tyr Gly Phe Phe Glu Ser Phe Pro Ala
 325 330 335
 Gly Val Ala Leu Gly Val Lys Thr Leu Lys Gly Tyr Val Gly Asn Met

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<210> 7801
<211> 221
<212> PRT
<213> B.fragilis
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Gln	Thr	Asn	Lys	Gln	Lys	Gln	Leu	Lys	Asn	Asn	Ser	Asn	Met	Lys	Arg
1				5					10					15	
Ile	Ile	Ile	Ala	Leu	Met	Val	Ala	Val	Thr	Phe	Cys	Ser	Leu	Ala	Met
			20					25					30		
Ala	Gln	Asn	Pro	Thr	Ile	Thr	Gln	Asp	Asn	Lys	Asn	Ser	Ser	Asp	Ser
		35					40				45				
Thr	Ile	Val	Thr	Glu	Tyr	Thr	Asp	Ile	Val	Asp	Ser	Ser	Thr	Val	Asp
	50					55					60				
Thr	Asp	Tyr	Gln	Ser	Ser	Ser	Phe	Asp	Phe	Gly	Asn	Glu	Phe	Pro	Phe
65				70						75				80	
Asn	Ile	Asp	Lys	Gly	Ala	Ile	Asn	Gly	Gly	Ile	Leu	Thr	Gly	Leu	Val
			85					90					95		
Val	Ile	Ile	Leu	Ile	Phe	Gly	Phe	Pro	Phe	Phe	Ile	Val	Phe	Ile	Ala
			100					105				110			
Phe	Tyr	Phe	Arg	Tyr	Lys	Asn	Arg	Lys	Ala	Lys	Tyr	Arg	Leu	Met	Glu
		115					120					125			
Gln	Ala	Leu	Ala	Thr	Gly	Gln	Pro	Leu	Pro	Glu	Gly	Ile	Phe	Lys	Asp
	130				135						140				
Thr	Leu	Pro	Gln	Asp	Tyr	Arg	Thr	Lys	Gly	Ile	Lys	Asn	Ile	Cys	Thr
145				150						155				160	
Gly	Ile	Gly	Leu	Phe	Ile	Phe	Leu	Trp	Ala	Ile	Thr	Asp	Glu	Phe	Ser
			165						170					175	
Ile	Gly	Cys	Ile	Gly	Leu	Leu	Val	Met	Phe	Thr	Gly	Ile	Gly	Gln	Trp
			180					185				190			
Ile	Ile	Ser	Arg	Asn	Gln	Gln	His	Glu	Arg	Pro	Glu	Asp	Pro	Phe	Thr
		195					200					205			
Arg	Pro	Thr	His	Lys	Asp	Glu	Thr	Leu	Asn	Glu	Gln	Lys			
	210					215					220				

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<210> 7802
<211> 245
<212> PRT
<213> B.fragilis
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Ser Glu Asn Asn His Val Asn Leu Arg Gln Phe Asn Asn Leu Ile Leu
1 5 10 15

[illegible]

<400> 7803

Leu	Leu	Arg	Asn	His	Ser	Val	Gln	Pro	Val	Cys	Ser	Arg	His	Leu	His
1				5					10					15	
Asp	Glu	Pro	His	Leu	Leu	Ser	Gln	Asn	Arg	Glu	Pro	Leu	Gly	Gly	Leu
			20					25					30		
Pro	Ala	His	Asn	Asp	Gln	Tyr	Cys	His	Asn	Leu	Arg	Trp	Leu	Leu	Leu
		35					40					45			
Leu	Phe	Ser	Ser	Phe	Tyr	Trp	Phe	Cys	Leu	Thr	His	Phe	Phe	Ile	Ser
	50					55					60				
Val	Ala	Lys	Leu	Val	Ile	Phe	Phe	Val	Phe	Arg	Ser	Leu	Lys	Gly	Val
65					70					75					80
Lys	Val	Ser	Phe	Cys	Tyr	Ser	Arg	Phe	Val	Lys	His	Asn	Ile	Tyr	Tyr
				85						90				95	
Leu	Cys	Val	Leu	Ile	Ile	Thr	Ile	Met	Ile	Glu	Tyr	Ile	Lys	Gly	Glu
			100					105					110		
Ile	Ala	Glu	Leu	Ser	Pro	Ala	Thr	Ala	Val	Ile	Asp	Cys	Asn	Gly	Leu
		115						120				125			
Gly	Tyr	Ala	Val	Asn	Ile	Ser	Leu	Asn	Thr	Tyr	Ser	Ala	Ile	Gln	Gly
	130					135					140				
Lys	Ser	Ser	Cys	Lys	Leu	Tyr	Ile	Tyr	Glu	Ala	Ile	Arg	Glu	Asp	Ala
145					150					155					160
Tyr	Val	Leu	Tyr	Gly	Phe	Ala	Asp	Lys	Gln	Glu	Arg	Glu	Leu	Phe	Leu
				165					170					175	

Leu Leu Ile Ser Val Ser Gly Ile Gly Gly Asn Thr Ala Arg Met Ile
 180 185 190
 Leu Ser Ala Leu Ser Pro Ala Glu Leu Val Asn Val Ile Ser Thr Glu
 195 200 205
 Asn Ala Asn Met Leu Lys Thr Val Lys Gly Ile Gly Leu Lys Thr Ala
 210 215 220
 Gln Arg Val Ile Val Asp Leu Lys Asp Lys Ile Lys Thr Gly Ala Met
 225 230 235 240
 Ala Ala Thr Ala Val Gly Gly Ala Ala Gly Ala Leu Leu Pro Ala Met
 245 250 255
 Asn Ala Glu Val Gln Glu Glu Ala Ile Ala Ala Leu Thr Met Leu Gly
 260 265 270
 Phe Ala Ala Ala Pro Ser Gln Lys Ala Val Leu Ala Ile Leu Lys Glu
 275 280 285
 Glu Pro Asp Ala Pro Val Glu Lys Val Ile Lys Leu Ala Leu Lys Arg
 290 295 300
 Leu
 305

<210> 7804

<211> 310

<212> PRT

<213> B.fragilis

<400> 7804

Ser Val Cys Lys Gly Thr Thr Phe Arg Ser Ser Leu Ser Thr Leu His
 1 5 10 15
 Ser Lys Phe Val Phe Leu Pro Ser Ile Thr Lys Asn Asn Lys Met Lys
 20 25 30
 Lys Leu Ile Val Leu Thr Cys Thr Leu Ser Leu Leu Thr Ala Cys Gly
 35 40 45
 Asp Ser Ile Glu Lys Lys Ala Gly Glu Lys Leu Ala Ala Ala Arg Ala
 50 55 60
 Ala Phe Glu His Asn Asp Tyr Asn Glu Ala Lys Leu Gln Ile Asp Ser
 65 70 75 80
 Ile Lys Ile Leu Tyr Pro Lys Ala Phe Asp Thr Arg Lys Glu Gly Ile
 85 90 95
 Lys Leu Met Gln Gln Val Glu Leu Lys Glu Gln Gln Glu Ser Leu Val
 100 105 110
 Tyr Leu Asp Ser Met Leu Gln Val Lys Gln Lys Glu Phe Glu Ala Ile
 115 120 125
 Lys Asn Lys Tyr Thr Phe Glu Lys Asn Glu Glu Tyr Gln Lys Ile Gly
 130 135 140
 Asn Tyr Phe Trp Pro Thr Gln Thr Val Glu Lys Asn Leu His Arg Ser
 145 150 155 160
 Phe Leu Arg Phe Gln Val Asn Glu Gln Gly Val Met Thr Leu Thr Ser
 165 170 175
 Ile Tyr Cys Gly Pro Ser Asn Ile His His Val Ala Val Lys Val Ile
 180 185 190
 Ala Pro Asp Gly Ser Phe Ala Glu Thr Pro Ala Ser Asn Asp Ser Tyr
 195 200 205
 Glu Thr Thr Asp Leu Gly Glu Lys Ile Glu Lys Ala Asp Tyr Lys Met
 210 215 220
 Gly Glu Asp Gly Asn Val Leu Ser Phe Leu Tyr Met Asn Arg Asp Lys
 225 230 235 240
 Lys Asn Ile Arg Val Glu Tyr Leu Gly Glu Arg Lys Phe Ser Thr Thr
 245 250 255
 Met Thr Pro Ser Asp Arg Glu Ala Leu Val Gly Thr Tyr Glu Leu Ala
 260 265 270

Lys Leu Leu Ser Ser Ile Arg Gln Ile Gln Gln Glu Lys Glu Glu Ala
 275 280 285
 Asn Leu Lys Ile Glu Phe Val Lys Arg Lys Met Glu Gln Lys Ala Gln
 290 295 300
 Glu Glu Ala Ala Glu Lys
 305 310

<210> 7805

<211> 202

<212> PRT

<213> B.fragilis

<400> 7805

His Met Ala Lys Thr Lys Thr Gly Ile Phe Ser Gly Ser Phe Asn Pro
 1 5 10 15
 Ile His Ile Gly His Leu Ala Leu Ala Asn Tyr Leu Cys Glu Phe Glu
 20 25 30
 Gly Leu Asp Glu Val Trp Phe Met Val Thr Pro His Asn Pro Phe Lys
 35 40 45
 Asn Gln Ala Asp Leu Trp Pro Asp Glu Leu Arg Leu Gln Leu Val Gln
 50 55 60
 Leu Ala Ile Glu Gly Tyr Pro Arg Phe Arg Val Ser Asp Phe Glu Phe
 65 70 75 80
 His Leu Pro Arg Pro Ser Tyr Thr Ile His Thr Leu Asn Arg Leu Lys
 85 90 95
 Gln Glu Tyr Pro Glu Arg Glu Phe Gln Leu Ile Ile Gly Ser Asp Asn
 100 105 110
 Trp Met Val Phe Asp Arg Trp Phe Glu Ser Glu Arg Ile Val Ser Glu
 115 120 125
 Asn Lys Ile Leu Val Tyr Pro Arg Pro Gly Phe Ser Val Asp Lys Ser
 130 135 140
 Gln Leu Pro Pro Asn Val His Val Ala Asp Ser Pro Ile Phe Glu Ile
 145 150 155 160
 Ser Ser Thr Phe Ile Arg Glu Ala Leu Ala Thr Gly Lys Asp Ile Arg
 165 170 175
 Tyr Phe Leu His Pro Ala Val Tyr Lys Arg Ile Ile Gln Gln Thr Asp
 180 185 190
 Ser Ile Asp Ser Ser His Ser Cys His Thr
 195 200

<210> 7806

<211> 146

<212> PRT

<213> B.fragilis

<400> 7806

Met Val Lys Lys Ile Thr Ile Ser Lys Arg Asp Arg Glu Lys Leu Lys
 1 5 10 15
 Glu Gln Lys Arg Lys Glu Lys Gln Gln Arg Lys Glu Glu Arg Gln Ser
 20 25 30
 Asn Gly Pro Ser Ser Phe Glu Asp Met Ile Ala Tyr Val Asp Gln Phe
 35 40 45
 Gly Val Leu His Ser Val Pro Gln Glu Arg Leu Glu Glu Val Asp
 50 55 60
 Ala Ser His Ile Glu Val Ser Val Pro Lys Gln Glu Asp Val Glu Val
 65 70 75 80
 Ala Pro Leu Met Gly Arg Ile Glu Tyr Phe Asn Ala Ala Lys Gly Tyr
 85 90 95
 Gly Phe Val Lys Asp Ala Asp Cys Gly Glu Lys Tyr Phe Phe His Ile

	100		105		110										
Ser	Ser	Ala	Pro	Ala	Thr	Ile	Ala	Glu	Gly	Asp	Arg	Val	Thr	Phe	Glu
	115						120					125			
Ile	Glu	Arg	Gly	Met	Arg	Gly	Met	Asn	Ala	Val	Arg	Ile	Ser	Ile	Val
	130					135					140				
Thr	Glu														
145															

<210> 7807

<211> 438

<212> PRT

<213> B.fragilis

<400> 7807

Ser	Pro	Arg	Asn	Met	Ala	Ser	Phe	Val	Ile	Glu	Gly	Gly	His	Arg	Leu
1			5					10					15		
Ser	Gly	Glu	Ile	His	Pro	Gln	Gly	Ala	Lys	Asn	Glu	Val	Leu	Gln	Ile
		20					25					30			
Ile	Cys	Ala	Thr	Leu	Leu	Thr	Ala	Glu	Glu	Val	Thr	Val	Asn	Asn	Ile
	35					40					45				
Pro	Asp	Ile	Leu	Asp	Val	Asn	Asn	Leu	Ile	Gln	Leu	Met	Arg	Asp	Met
	50					55					60				
Gly	Val	Thr	Val	Ala	Lys	Thr	Gly	Val	Asp	Ser	Tyr	Ser	Phe	Lys	Ala
65				70					75					80	
Ala	Asn	Val	Asp	Leu	Ala	Tyr	Leu	Glu	Ser	Asp	Asn	Phe	Leu	Lys	Lys
			85					90					95		
Cys	Ser	Ser	Leu	Arg	Gly	Ser	Val	Met	Leu	Ile	Gly	Pro	Met	Val	Ala
			100				105					110			
Arg	Phe	Gly	Lys	Ala	Met	Ile	Ser	Lys	Pro	Gly	Gly	Asp	Lys	Ile	Gly
	115					120					125				
Arg	Arg	Arg	Leu	Asp	Thr	His	Phe	Ile	Gly	Ile	Gln	Asn	Leu	Gly	Ala
	130				135						140				
Asp	Phe	Thr	Tyr	Asn	Glu	Glu	Arg	Glu	Ile	Tyr	Glu	Ile	Ser	Ala	Glu
145				150					155					160	
Glu	Leu	Lys	Gly	Thr	Ser	Met	Leu	Leu	Asp	Glu	Ala	Ser	Val	Thr	Gly
			165					170					175		
Thr	Ala	Asn	Ile	Val	Met	Ala	Ala	Val	Leu	Ala	Lys	Gly	Lys	Thr	Thr
		180						185					190		
Ile	Tyr	Asn	Ala	Ala	Cys	Glu	Pro	Tyr	Leu	Gln	Gln	Leu	Cys	Lys	Met
	195						200					205			
Leu	Asn	Arg	Met	Gly	Ala	Lys	Ile	Ser	Gly	Ile	Ala	Ser	Asn	Leu	Leu
	210					215					220				
Thr	Ile	Glu	Gly	Val	Glu	Glu	Leu	His	Gly	Thr	Asp	His	Thr	Val	Leu
225				230						235				240	
Pro	Asp	Met	Ile	Glu	Val	Gly	Ser	Phe	Ile	Gly	Met	Ala	Ala	Met	Thr
			245						250					255	
Arg	Ser	Glu	Ile	Thr	Ile	Lys	Asn	Val	Ser	Tyr	Glu	Asn	Leu	Gly	Ile
		260					265						270		
Ile	Pro	Glu	Ser	Phe	Arg	Arg	Leu	Gly	Ile	Lys	Leu	Glu	Gln	Arg	Gly
	275						280					285			
Asp	Asp	Ile	Phe	Val	Pro	Ala	Gln	Asp	Cys	Tyr	Gln	Ile	Glu	Ser	Phe
	290					295					300				
Ile	Asp	Gly	Ser	Ile	Met	Thr	Ile	Ala	Asp	Ala	Pro	Trp	Pro	Gly	Leu
305				310						315				320	
Thr	Pro	Asp	Leu	Leu	Ser	Val	Met	Leu	Val	Val	Ala	Thr	Gln	Ala	Lys
			325						330				335		
Gly	Ser	Val	Leu	Ile	His	Gln	Lys	Met	Phe	Glu	Ser	Arg	Leu	Phe	Phe
		340					345						350		
Val	Asp	Lys	Leu	Ile	Asp	Met	Gly	Ala	Gln	Ile	Ile	Leu	Cys	Asp	Pro

355 360 365
 His Arg Ala Val Val Ile Gly His Asn His Gly Phe Thr Leu Arg Gly
 370 375 380
 Gly Asn Met Thr Ser Pro Asp Ile Arg Ala Gly Ile Ala Leu Leu Ile
 385 390 395 400
 Ala Ala Met Ser Ala Glu Gly Ile Ser Arg Ile His Asn Ile Glu Gln
 405 410 415
 Ile Asp Arg Gly Tyr Gln Asn Ile Glu Gly Arg Leu Asn Ala Ile Gly
 420 425 430
 Ala Arg Ile Thr Arg Ile
 435

<210> 7808
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 <212> PRT
 <213> B.fragilis

<400> 7808
 Gly Ile Met Asn Ile Leu Tyr Thr Tyr Pro Glu Thr Ile Val Asp Gly
 1 5 10 15
 Glu Gly Ile Arg Tyr Ser Ile Tyr Leu Ala Gly Cys Arg His Gly Cys
 20 25 30
 Pro Gly Cys His Asn Pro Glu Ser Trp Asn Pro Gln Ala Gly Glu Glu
 35 40 45
 Leu Ser Glu Gly Arg Leu Ala Ser Ile Ile Arg Glu Ile Asn Ser Asn
 50 55 60
 Pro Leu Leu Asp Gly Val Thr Phe Ser Gly Gly Asp Pro Phe Tyr Asp
 65 70 75 80
 Pro Glu Ala Phe Leu Pro Val Ile Arg Arg Val Lys Thr Glu Thr Gly
 85 90 95
 Gln Asn Ile Trp Cys Tyr Thr Gly Tyr Thr Tyr Glu Glu Ile Glu Ser
 100 105 110
 Asp Pro Lys Leu Ala Ala Ile Leu Pro Tyr Ile Asp Val Leu Val Asp
 115 120 125
 Gly Arg Phe Lys Gln Glu Leu Tyr Ser Pro His Leu Glu Phe Arg Gly
 130 135 140
 Ser Ser Asn Gln Arg Ile Ile Lys Leu Lys
 145 150

<210> 7809
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 7809
 Asp His Met Asn Ala Ser Lys Thr Asp Ile Arg Ile Thr Ser Pro Asp
 1 5 10 15
 Arg Glu Val Leu Ser Tyr Ser Gly Val Pro Lys Glu His Pro Phe Val
 20 25 30
 Lys Glu Ser Pro Glu Leu Phe Trp Tyr Ala Val Arg Val Thr Tyr Ser
 35 40 45
 Arg Glu Leu Ala Leu Lys Glu Tyr Leu Asp Gly Glu Cys Ile Glu Asn
 50 55 60
 Phe Ile Pro Met His Tyr Glu Tyr Ile Val Lys Asn Glu Arg Arg Val
 65 70 75 80
 Arg Lys Leu Val Pro Ala Val His Asn Leu Val Phe Ile Arg Ser Ser
 85 90 95
 Arg Glu Arg Ile Asp Arg Ile Lys Asp Glu Met Gly Met Thr Leu Pro
 100 105 110

Ile Arg Tyr Ile Met Asp Arg Glu Ser Arg Gln Pro Ile Val Val Pro
 115 120 125
 Thr Ser Gln Met Arg Ser Phe Met Ala Val Ala Gly Ser Tyr Asp Gln
 130 135 140
 Gln Leu Val Tyr Leu Glu Pro Ser Ala Val Ala Phe Arg Lys Gly Gln
 145 150 155 160
 Arg Val Arg Val Thr Gly Gly Ile Phe Ala Gly Val Glu Gly Glu Phe
 165 170 175
 Ile Arg Val Lys Asn Asp Arg Arg Val Met Val Ser Ile Gln Gly Val
 180 185 190
 Met Ala Val Ala Thr Thr Tyr Ile His Pro Ser Leu Ile Glu Pro Leu
 195 200 205
 Asp Leu
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<210> 7810

<211> 474

<212> PRT

<213> B.fragilis

<400> 7810

Gly Lys Met Lys Leu Pro Ile Ser Phe Ile Glu Ser Thr Arg Ala Leu
 1 5 10 15
 Met Gly Asp Glu Glu Tyr Gln Glu Leu Ser Val Ala Leu Glu Gln Glu
 20 25 30
 Pro Pro Ala Ser Val Arg Leu Asn Ser Lys Phe Pro Gly Leu Ala Ala
 35 40 45
 Cys Ser Ser Ile Ser Gly Arg Ile Pro Trp Ala Ala Glu Gly Tyr Tyr
 50 55 60
 Leu Asn Gln Arg Leu Thr Phe Thr Phe Asp Pro Leu Phe His Ala Gly
 65 70 75 80
 Cys Tyr Tyr Val Gln Glu Ala Ser Ser Met Phe Val Glu Gln Val Leu
 85 90 95
 Arg Arg Tyr Val Thr Thr Pro Val Lys Met Leu Asp Leu Cys Ala Ala
 100 105 110
 Pro Gly Gly Lys Ser Thr His Ala Arg Ser Val Leu Pro Glu Gly Ser
 115 120 125
 Leu Leu Val Ala Asn Glu Val Ile Arg Asn Arg Ser Gln Ile Leu Ala
 130 135 140
 Glu Asn Leu Thr Lys Trp Gly Tyr Ala Asp Val Val Thr Asn Asn
 145 150 155 160
 Asp Pro Ser Asp Phe Ser Arg Ile Gly Ser Phe Phe Asp Val Ile Leu
 165 170 175
 Thr Asp Val Pro Cys Ser Gly Glu Gly Met Phe Arg Lys Asp Pro Gly
 180 185 190
 Ala Ile Glu Glu Trp Ser Pro Glu Asn Val Glu Ile Cys Trp Gln Arg
 195 200 205
 Gln Arg Arg Ile Ile Thr Asp Ile Trp Pro Cys Leu Lys Pro Gly Gly
 210 215 220
 Ile Leu Ile Tyr Ser Thr Cys Thr Tyr Asn Thr Arg Glu Asp Glu Glu
 225 230 235 240
 Asn Ile Ala Trp Ile Arg Gln Glu Phe Gly Ala Glu Pro Leu Pro Leu
 245 250 255
 Ala Val Pro Thr Glu Trp Asn Ile Thr Gly Ser Leu Leu Val Gly Val
 260 265 270
 Asp Ala Pro Val Tyr Arg Phe Leu Pro His Lys Thr Gln Gly Glu Gly
 275 280 285
 Phe Phe Leu Ala Ala Leu Arg Lys Pro Glu Glu Asp Arg Glu Ala Asp
 290 295 300

Thr	Asp	Leu	Phe	Ser	Pro	Lys	Lys	Lys	Lys	Ser	Lys	Gly	Asp	Thr	Ala
305					310					315					320
Ala	Ser	Pro	Val	Ser	Lys	Glu	Asn	Leu	Ala	Ile	Ala	Lys	Ser	Trp	Leu
				325					330						335
Ala	Ser	Ser	Asp	Glu	Tyr	Asn	Leu	Leu	Val	Asn	Gly	Thr	Ala	Ile	Thr
			340					345							350
Ala	Phe	Pro	Val	Tyr	Tyr	Gln	Asn	Asp	Leu	Ala	Leu	Leu	Arg	Gln	Ser
		355					360								365
Leu	Arg	Ile	Val	Gln	Ala	Gly	Thr	Glu	Val	Ala	Glu	Val	Lys	Gly	Lys
	370					375					380				
Asp	Leu	Ile	Pro	Ala	His	Gly	Leu	Ala	Met	Ser	Arg	Leu	Leu	Lys	Thr
385					390					395					400
Ser	Val	Phe	Ser	Thr	Glu	Ala	Leu	Thr	Tyr	Glu	Gln	Ala	Ile	Ala	Tyr
				405					410						415
Leu	Arg	Lys	Glu	Ala	Ile	Val	Leu	Pro	Pro	Ser	Val	Pro	Lys	Gly	Tyr
			420					425							430
Val	Leu	Val	Thr	Tyr	Lys	Glu	Ile	Pro	Leu	Gly	Phe	Val	Lys	Asn	Ile
		435					440								445
Gly	Asn	Arg	Ala	Asn	Asn	Leu	Tyr	Pro	Gln	Glu	Trp	Arg	Ile	Arg	Ser
	450					455									460
Gly	Tyr	Leu	Pro	Asp	Asp	Ile	Arg	Thr	Leu						
465					470										

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 <212> PRT
 <213> B.fragilis

<400> 7811															
Arg	Lys	Lys	Asn	Met	Leu	Asn	Lys	Ile	Ile	His	Phe	Ser	Leu	Gln	Asn
1				5					10					15	
Arg	Ile	Leu	Val	Leu	Val	Ala	Ser	Val	Leu	Leu	Leu	Ile	Gly	Gly	Thr
			20					25						30	
Tyr	Thr	Ala	Met	His	Thr	Glu	Val	Asp	Val	Phe	Pro	Asp	Leu	Asn	Ala
		35				40						45			
Pro	Thr	Val	Val	Ile	Met	Thr	Glu	Ala	Asn	Gly	Met	Ala	Ala	Glu	Glu
	50				55						60				
Val	Glu	Gln	Leu	Val	Thr	Phe	Pro	Val	Glu	Thr	Ala	Val	Asn	Gly	Ala
65					70					75					80
Thr	Gly	Val	Arg	Arg	Val	Arg	Ser	Ser	Ser	Thr	Asn	Gly	Phe	Ser	Val
			85						90					95	
Val	Trp	Val	Glu	Phe	Asp	Trp	Gly	Thr	Asp	Ile	Tyr	Leu	Ala	Arg	Gln
		100						105						110	
Ile	Val	Ser	Glu	Lys	Leu	Ala	Ile	Val	Gly	Glu	Glu	Leu	Pro	Ser	Asn
		115					120							125	
Val	Gly	Lys	Pro	Thr	Leu	Gly	Pro	Gln	Ser	Ser	Ile	Leu	Gly	Glu	Val
		130				135					140				
Leu	Ile	Ile	Gly	Leu	Thr	Ala	Asp	Ser	Thr	Ser	Met	Leu	Asp	Leu	Arg
145					150					155					160
Thr	Ile	Ala	Asp	Trp	Thr	Ile	Arg	Pro	Arg	Leu	Leu	Ser	Thr	Gly	Gly
			165						170						175
Val	Ala	Gln	Val	Ala	Val	Leu	Gly	Gly	Glu	Leu	Lys	Glu	Tyr	Gln	Ile
		180						185						190	
Gln	Leu	Asp	Pro	Glu	Arg	Met	Arg	His	Tyr	Gly	Val	Ser	Met	Asn	Glu
		195					200						205		
Val	Met	Thr	Val	Thr	Arg	Gly	Met	Asn	Leu	Asn	Ala	Asn	Gly	Gly	Val
	210					215					220				
Leu	Tyr	Glu	Tyr	Gly	Asn	Glu	Tyr	Ile	Val	Arg	Gly	Val	Leu	Ser	Thr
225					230					235					240

Ala Asn Ile Glu Gln Leu Gly Lys Ala Val Val Lys Ser Ile Asp Ser
 245 250 255
 Val Pro Val Leu Leu Glu Asp Ile Ala Asp Val Arg Ile Gly Pro Lys
 260 265 270
 Ala Pro Lys Leu Gly Thr Ala Ser Glu Arg Gly Lys Pro Ala Val Leu
 275 280 285
 Met Thr Val Thr Lys Gln Pro Ala Thr Ser Thr Leu Glu Leu Thr Asp
 290 295 300
 Lys Leu Glu Ala Ser Leu Gln Asp Leu Arg Lys Asn Leu Pro Pro Asp
 305 310 315 320
 Val Lys Val Ser Thr Asp Ile Phe Arg Gln Ser Arg Phe Ile Asp Ser
 325 330 335
 Ser Ile Ser Asn Val Lys Lys Ser Leu Phe Glu Gly Gly Ile Phe Val
 340 345 350
 Val Ile Val Leu Phe Leu Phe Leu Ala Asn Val Arg Thr Thr Ile Ile
 355 360 365
 Ser Leu Val Thr Leu Pro Leu Ser Leu Leu Val Ser Ile Leu Thr Leu
 370 375 380
 His Phe Met Gly Leu Thr Ile Asn Thr Met Ser Leu Gly Gly Met Ala
 385 390 395 400
 Ile Ala Ile Gly Ser Leu Val Asp Asp Ala Ile Val Asp Val Glu Asn
 405 410 415
 Val Tyr Lys Arg Leu Arg Glu Asn Arg Leu Leu Pro Glu Asn Glu Arg
 420 425 430
 Leu Ser Val Ile Gln Val Val Phe Asn Ala Ser Lys Glu Val Arg Met
 435 440 445
 Pro Ile Leu Asn Ser Thr Leu Ile Ile Val Val Ser Phe Val Pro Leu
 450 455 460
 Phe Phe Leu Ser Gly Met Glu Gly Arg Met Leu Val Pro Leu Gly Ile
 465 470 475 480
 Ala Phe Ile Val Ala Leu Phe Ala Ser Thr Ile Val Ala Leu Thr Leu
 485 490 495
 Thr Pro Val Leu Cys Ser Tyr Leu Leu Gly Lys Glu Lys Gly Asp Lys
 500 505 510
 Leu Pro Lys Glu Ala Phe Val Ala Arg Trp Met Lys Gly Val Tyr Glu
 515 520 525
 Lys Ala Leu Thr Trp Val Leu Ile His Lys Arg Leu Thr Leu Gly Ser
 530 535 540
 Thr Ile Gly Leu Phe Ile Ile Thr Leu Gly Phe Phe Thr Leu Gly
 545 550 555 560
 Arg Ser Phe Leu Pro Pro Phe Asn Glu Gly Ser Phe Thr Ile Asn Ile
 565 570 575
 Ser Ser Leu Pro Gly Ile Ser Leu Glu Glu Ser Asp Lys Met Gly His
 580 585 590
 Arg Ala Glu Glu Leu Leu Leu Ser Ile Pro Glu Ile Gln Thr Val Ala
 595 600 605
 Arg Lys Thr Gly Arg Ala Glu Leu Asp Glu His Ala Leu Gly Val Asn
 610 615 620
 Val Ser Glu Ile Glu Ala Pro Phe Glu Leu Lys Asp Arg Ser Arg Asn
 625 630 635 640
 Glu Leu Met Ala Asp Val Arg Glu Lys Leu Gly Thr Ile Thr Gly Ala
 645 650 655
 Asn Ile Glu Ile Gly Gln Pro Ile Ser His Arg Ile Asp Ala Met Leu
 660 665 670
 Ser Gly Thr Lys Ala Asn Ile Ala Ile Lys Leu Phe Gly Asp Asp Leu
 675 680 685
 Asn Lys Met Phe Ser Leu Gly Asn Gln Ile Lys Glu Ala Ile Gly Asn
 690 695 700
 Ile Pro Gly Ile Ala Asp Leu Asn Val Glu Gln Gln Ile Glu Arg Pro

705 710 715 720
 Gln Leu Lys Ile Thr Pro Lys Arg Glu Met Leu Ala Lys Tyr Gly Ile
 725 730 735
 Thr Leu Pro Glu Phe Ser Glu Tyr Ile Asn Val Ala Leu Ala Gly Glu
 740 745 750
 Val Ile Ser Gln Val Tyr Glu Gln Gly Lys Ser Phe Asp Leu Ile Val
 755 760 765
 Lys Val Lys Asn Asn Phe Arg Asp Glu Ala Glu Lys Ile Arg Asn Leu
 770 775 780
 Met Val Asp Thr Gln Asp Gly Lys Lys Val Pro Leu Ser Tyr Ile Ala
 785 790 795 800
 Asp Val Ala Ser Ser Met Gly Pro Asn Thr Ile Asn Arg Glu Asn Val
 805 810 815
 Lys Arg Lys Ile Val Ile Ser Ala Asn Val Ala Asp Arg Asp Leu Arg
 820 825 830
 Ser Val Val Asn Asp Ile Gln Lys Gln Val Asp Glu Gln Ile Lys Leu
 835 840 845
 Pro Glu Gly Tyr His Ile Glu Tyr Gly Gly Gln Phe Glu Ser Glu Gln
 850 855 860
 Ala Ala Ser Arg Thr Leu Ala Leu Thr Ser Phe Met Ser Ile Val Val
 865 870 875 880
 Ile Phe Leu Leu Leu Tyr His Glu Phe Arg Ser Val Lys Glu Ser Ala
 885 890 895
 Val Ile Leu Ile Asn Leu Pro Leu Ala Leu Ile Gly Gly Val Phe Ala
 900 905 910
 Leu Leu Ile Thr Thr Gly Glu Ile Ser Ile Pro Ala Ile Ile Gly Phe
 915 920 925
 Ile Ser Leu Phe Gly Ile Ala Thr Arg Asn Gly Met Leu Leu Ile Ser
 930 935 940
 His Tyr Asn His Leu Gln Gln Val Glu Gly Leu Gly Val Tyr Glu Ser
 945 950 955 960
 Val Ile Arg Gly Ser Leu Asp Arg Leu Asn Pro Ile Val Met Thr Ala
 965 970 975
 Leu Ser Ser Ala Leu Ala Leu Ile Pro Leu Ala Leu Ser Gly Ser Leu
 980 985 990
 Pro Gly Asn Glu Ile Gln Ser Pro Met Ala Lys Val Ile Leu Gly Gly
 995 1000 1005
 Leu Leu Thr Ser Thr Phe Leu Asn Gly Phe Ile Ile Pro Ile Val Tyr
 1010 1015 1020
 Leu Met Met Asn Gly Lys Arg Lys
 1025 1030

<210> 7812

<211> 139

<212> PRT

<213> B.fragilis

<400> 7812

Lys Ala Asn Leu Leu Tyr Lys Met Asp Ile Glu Glu Ile Lys Asp Phe
 1 5 10 15
 Arg Pro Leu Ile Leu Val Ala Glu Asp Asp Asp Ser Asn Phe Lys Leu
 20 25 30
 Ile Lys Ala Ile Ile Gly Lys Lys Cys Asp Ile Leu Trp Ala Lys Asn
 35 40 45
 Gly Glu Glu Met Leu Asn Leu Tyr Arg Glu His Thr Gln Asp Ala His
 50 55 60
 Ala Ile Leu Met Asp Ile Lys Met Pro Ile Met Asn Gly Leu Glu Ala
 65 70 75 80
 Thr Arg Ile Ile Arg Glu Glu Gly Ala Ser Leu Pro Ile Ile Met Gln

				85					90					95	
Thr	Ala	Tyr	Ala	Phe	Ser	Ser	Asp	Arg	Glu	Asn	Ala	Met	Gln	Ala	Gly
			100					105					110		
Ala	Ser	Glu	Val	Leu	Val	Lys	Pro	Ile	Thr	Val	Ser	Ala	Leu	Arg	Gly
		115					120					125			
Cys	Leu	Ser	Ser	Tyr	Phe	Pro	Glu	Ile	Lys	Trp					
	130						135								

<210> 7813

<211> 483

<212> PRT

<213> B.fragilis

<400> 7813

Tyr	Met	Asn	Leu	Asn	Pro	Ile	Ile	Asn	Asn	Phe	Gln	Arg	Pro	Ile	Arg
1				5				10						15	
Lys	Val	Gln	Ile	Cys	Cys	Ile	Leu	Ile	Phe	Ser	Cys	Ala	Ala	Cys	Ser
			20					25				30			
Leu	Asn	Ile	Pro	Tyr	Glu	Asn	Gln	Tyr	Ser	Asp	Pro	Asp	Ala	Ile	Thr
		35					40				45				
Thr	Val	Thr	Ala	Ala	Arg	Glu	Leu	Leu	Ala	Ser	Ala	Tyr	Asp	Ala	Ile
	50					55					60				
Pro	Lys	Pro	Glu	Phe	Ser	Leu	Ser	Val	Leu	Ser	Asp	Asp	Phe	Gln	Pro
65					70					75					80
Thr	Phe	Leu	Ile	Asn	Leu	Asn	Ala	Asp	Leu	Asn	Asn	Leu	Tyr	Lys	Trp
				85					90					95	
His	Pro	Lys	Pro	Met	Glu	Asp	Leu	Ser	Asn	Ser	Leu	Trp	Glu	Lys	Tyr
			100					105					110		
Tyr	Ser	Ala	Ile	Ala	Ile	Ala	Asn	Thr	Val	Leu	Glu	Arg	Ile	His	Tyr
		115					120					125			
Val	Ser	Pro	Ile	Ser	Asp	Ser	Asp	Lys	Gln	Glu	Leu	Gln	Cys	Ile	Val
	130						135				140				
Ser	Glu	Ala	Lys	Thr	Leu	Lys	Ala	Tyr	Cys	Tyr	Phe	Asn	Leu	Leu	Arg
145					150					155					160
Leu	Phe	Ala	Pro	Thr	Tyr	Pro	Glu	Gly	Pro	Glu	Lys	Asp	Gly	Ile	Ile
				165					170					175	
Leu	Lys	Glu	Arg	Phe	Glu	Leu	Ala	Phe	Leu	Lys	Arg	Ser	Ser	Ile	Ser
			180					185					190		
Glu	Cys	Val	Asn	Ala	Ile	Arg	Gln	Leu	Leu	Thr	Glu	Ala	Val	Thr	Val
	195						200					205			
Asp	Asn	Arg	Pro	Ser	Gln	Val	Tyr	Trp	Phe	Ser	Arg	Gln	Ser	Ala	Tyr
	210					215					220				
Tyr	Leu	Leu	Ala	Ala	Leu	Glu	Leu	Tyr	Ala	Glu	Asn	Tyr	Asp	Lys	Ala
225					230					235					240
Glu	Glu	Tyr	Ala	Leu	Lys	Ile	Leu	Ser	Ser	Thr	Asn	Ala	Tyr	Asn	Val
				245					250					255	
Leu	Ala	Pro	Val	His	Tyr	Lys	Lys	Leu	Trp	Glu	Gln	Glu	Pro	Cys	Glu
			260					265					270		
Glu	Cys	Ile	Phe	Ser	Leu	His	Thr	Thr	Asn	Ser	Tyr	Tyr	Thr	Asp	Met
	275						280					285			
Asn	Tyr	Glu	Arg	Lys	Lys	Gly	Asp	Tyr	Phe	Thr	Ile	Asn	Ser	Thr	Leu
	290					295					300				
Thr	Gln	Leu	Tyr	Thr	Ala	Asn	Asp	Ile	Arg	Tyr	Glu	Ala	Thr	Val	Tyr
305					310					315					320
Pro	Gln	Glu	Met	Pro	Gly	Glu	Ser	Ile	Gly	Glu	Thr	Leu	Pro	Val	Leu
				325					330					335	
Tyr	Leu	Gly	Lys	Tyr	Asn	Lys	Gln	Asn	Trp	Asn	Tyr	Lys	Pro	Ile	Gln
		340					345						350		
Tyr	Ile	Asn	Lys	Leu	Arg	Val	Ser	Gly	Ile	Cys	Phe	Ile	Leu	Ala	Glu

355 360 365
 Ala Tyr Cys Gln Asp Gln Lys Gly His Asp Ala Leu Ala Leu Glu Val
 370 375 380
 Ile Asn Asn Tyr Leu Ala Gln Arg Glu Ala Pro Leu Leu Asp Thr Ser
 385 390 395 400
 Leu Ser Gly Ala Pro Leu Leu Lys Ala Ile Leu Gln Glu Lys Trp Lys
 405 410 415
 Glu Phe Ala Gly Glu Gly Glu Arg Tyr Phe Asp Leu Lys Arg Tyr Arg
 420 425 430
 Lys Ser Leu Leu Ser Asp Trp Asn Leu Ser Ala Thr Met Lys Asn Lys
 435 440 445
 Pro Ile Lys Pro Asp Asp Tyr Arg Trp Leu Phe Pro Ile Pro Lys Gly
 450 455 460
 Glu Tyr Leu Tyr Asn Glu Asn Ile Ser Gln Asn Ala Gly Trp Thr Lys
 465 470 475 480
 Ile Glu Lys

<210> 7814
 <211> 429
 <212> PRT
 <213> B.fragilis

<400> 7814

Ile Lys Thr Glu Val Leu Lys Leu Tyr Val Leu Ile Ile Ala Ile Ile
 1 5 10 15
 Leu Ser Ile Gly Thr Ala Arg Thr Gln Asn Ile Asp Ser Leu Leu Met
 20 25 30
 Gln Arg Glu Asp Thr Thr Gln Phe Ile Arg Ser Asp Ser Leu Val Leu
 35 40 45
 Gln Phe Leu Glu Tyr Ser Asn Ile Pro Ile Thr Asp Asn Asn Lys Val
 50 55 60
 Lys Leu Ile Lys Ser Gly Arg Glu Lys Phe Glu Asp Leu Phe Glu Ala
 65 70 75 80
 Ile Arg Gly Ala Lys His His Ile His Leu Glu Tyr Phe Asn Phe Arg
 85 90 95
 Asn Asp Ser Ile Ala Asn Ala Leu Phe Asp Leu Leu Gly Glu Lys Val
 100 105 110
 Lys Glu Gly Val Lys Val Arg Ala Met Phe Asp Ala Phe Gly Asn Trp
 115 120 125
 Ser Asn Asn Lys Pro Leu Lys Lys Arg His Leu Lys Ala Ile Arg Glu
 130 135 140
 Lys Gly Ile Glu Ile Val Lys Phe Asp Pro Phe Lys Phe Pro Tyr Ile
 145 150 155 160
 Asn His Ala Ala His Arg Asp His Arg Lys Ile Ala Val Ile Asp Gly
 165 170 175
 Lys Ile Gly Tyr Thr Gly Gly Met Asn Ile Ala Asp Tyr Tyr Ile Asn
 180 185 190
 Gly Leu Pro Lys Ile Gly Thr Trp Arg Asp Met His Ile Arg Ile Glu
 195 200 205
 Gly Asp Ala Val Asn Ile Leu Gln Glu Ile Phe Leu Asp Ile Trp Asn
 210 215 220
 Lys Thr Thr Lys Gln Asn Ile Val Gly Glu Glu Tyr Phe Pro Asn His
 225 230 235 240
 Pro Glu Arg Ala Asp Ser Cys Asn Thr Val Ile Ser Ile Val Asp Arg
 245 250 255
 Thr Pro Lys Arg Asn Ser Arg Met Leu Ser His Thr Tyr Ala Met Ser
 260 265 270
 Ile Tyr Ala Ala Gln His Asp Val Arg Ile Val Asn Pro Tyr Phe Val

275 280 285
 Pro Thr Ser Ser Ile Arg Lys Ala Leu Lys Arg Ala Leu Asn Arg Gly
 290 295 300
 Thr Lys Val Glu Ile Met Ile Ser Ser Lys Ser Asp Ile Pro Phe Thr
 305 310 315 320
 Pro Asp Ala Ser Leu Tyr Ala Val Gln Lys Leu Met Lys Lys Gly Ala
 325 330 335
 Met Ile Tyr Leu Tyr Asn Gly Gly Phe His His Ser Lys Ile Met Met
 340 345 350
 Val Asp Asp Leu Phe Cys Thr Val Gly Thr Ala Asn Leu Asn Ser Arg
 355 360 365
 Ser Leu Arg Tyr Asp Tyr Glu Thr Asn Ala Phe Ile Phe Asp Lys Asp
 370 375 380
 Ile Thr Gln Gln Leu Asn Asp Val Phe Glu Ala Asp Met Leu His Cys
 385 390 395 400
 Thr Arg Leu Thr Pro Glu Met Trp Lys Gln Lys Ser Ala Trp Lys Lys
 405 410 415
 Phe Lys Cys Trp Phe Ala Asn Leu Phe Thr Pro Phe Leu
 420 425

<210> 7815

<211> 448

<212> PRT

<213> B.fragilis

<400> 7815

Ile Val Asp Glu Ile Gly Gly Asn Leu His Gln Ser Gly Glu Gln Thr
 1 5 10 15
 Ala Asp Gln Cys Arg Tyr Pro Ile Glu Phe Ser Val Gly Lys Ser Gln
 20 25 30
 Cys Thr Thr Tyr His Tyr Arg Ser Asn Gly Thr Cys Gln Cys Phe Gly
 35 40 45
 Ala Gly Arg Lys Tyr Pro Cys Leu Gln Arg Val Thr Phe His Phe Phe
 50 55 60
 His Phe Leu Phe Leu Ser Val Phe Glu Arg Thr Lys Ile Gly Gln
 65 70 75 80
 Lys Thr Tyr Ile Phe Ala Phe Leu Ser Ile Phe Ala Leu Leu Ile Leu
 85 90 95
 Glu Asn Met Lys Lys Ile Ile Tyr Leu Leu Ala Ala Leu Leu Leu
 100 105 110
 Leu Ser Ser Cys Lys Ser Lys Lys Asn Leu Val Ser Pro Ile Pro Arg
 115 120 125
 Pro Val Leu Asn Val Asp Ser Val Arg Pro Asp Ser Ser Asp Val Val
 130 135 140
 Ala Arg Leu Phe Ser Pro Asp Thr Ser Glu Leu Lys Lys Phe Ser Val
 145 150 155 160
 Lys Arg Lys Arg Glu Lys Thr His Val Ala Ser Pro Val Ile Thr Arg
 165 170 175
 Ser Ala Pro Ser Ile Val Ala Arg Gly Thr Arg Ile Thr Ser Ser Ala
 180 185 190
 Val Ser Val Ser Ser Val Tyr Pro Gly Ile Asp Arg Val Lys Lys Tyr
 195 200 205
 Glu Phe Thr His Arg Asp Val Pro Asp Ala Phe Asp Gly Phe Arg Ile
 210 215 220
 Ala Phe Ile Ser Asp Leu His Tyr Lys Ser Leu Phe Gln Gly Glu Gly
 225 230 235 240
 Leu Glu Ser Leu Val Arg Leu Leu Asn Ala Gln His Ala Asp Val Leu
 245 250 255
 Leu Met Gly Gly Asp Tyr Gln Glu Gly Cys Gln Tyr Val Pro Glu Leu

260	265	270
Phe Ala Ala Leu Ala Lys Val Lys Thr Pro Met Gly Thr Tyr Gly Val		
275	280	285
Met Gly Asn Asn Asp Tyr Glu Arg Cys His Asp Glu Ile Ile Arg Glu		
290	295	300
Met Gln Arg Tyr Gly Met Arg Pro Leu Glu His Gln Ile Asp Thr Leu		
305	310	315
Arg Arg Asp Gly Ala Gln Ile Ile Leu Ala Gly Val Arg Asn Pro Phe		
325	330	335
Asp Leu Ala Asn Asn Gly Val Ser Pro Thr Leu Ser Leu Ser Pro Ser		
340	345	350
Asp Phe Val Ile Leu Leu Val His Thr Pro Asp Tyr Ala Glu Asp Val		
355	360	365
Ser Val Ala Asn Ser Asp Leu Val Leu Ala Gly His Thr His Gly Gly		
370	375	380
Gln Val Arg Ile Leu Gly Tyr Ala Pro Ile Ile Pro Ser His Tyr Gly		
385	390	395
Ser Arg Phe Leu Thr Gly Leu Lys Tyr Asn Ser Ala Lys Ile Pro Met		
405	410	415
Ile Val Thr Asn Gly Ile Gly Thr Ser Asn Lys Asn Ile Arg Ile Gly		
420	425	430
Ala Pro Ala Glu Ile Val Ile Ile Thr Leu His Arg Leu Arg Asn Glu		
435	440	445

<210> 7816

<211> 482

<212> PRT

<213> B.fragilis

<400> 7816

Lys Met Ile Glu Leu Thr Gln Glu Glu Leu Lys Gln His Phe Ser Glu		
1	5	10
Pro Ile Phe Gly Gln Ile Ser Glu Thr Ala Asp Ala Leu Gly Leu Glu		
20	25	30
Cys Tyr Val Val Gly Gly Tyr Val Arg Asp Ile Phe Leu Gln Arg Pro		
35	40	45
Ser Lys Asp Ile Asp Val Val Val Gly Ser Gly Ile Ala Met Ala		
50	55	60
Glu Ala Leu Gly Lys Arg Leu Gly Arg Gly Ala His Val Ser Val Phe		
65	70	75
Lys Asn Phe Gly Thr Ala Gln Val Lys Cys His Gly Thr Glu Val Glu		
85	90	95
Phe Val Gly Ala Arg Lys Glu Ser Tyr Gln Arg Asp Ser Arg Lys Pro		
100	105	110
Met Val Glu Asp Gly Thr Leu Glu Asp Asp Gln Asn Arg Arg Asp Phe		
115	120	125
Thr Ile Asn Ala Leu Ala Val Cys Leu Asn Lys Gly Arg Phe Gly Glu		
130	135	140
Leu Val Asp Pro Phe Gly Gly Met Asn Asp Leu Lys Glu Lys Ile Ile		
145	150	155
Arg Thr Pro Leu Asp Pro Asp Ile Thr Phe Ser Asp Asp Pro Leu Arg		
165	170	175
Met Met Arg Cys Ile Arg Phe Ala Thr Gln Leu Asn Phe Tyr Ile Asp		
180	185	190
Asp Asp Thr Phe Glu Ser Leu Cys Arg Asn Arg Glu Arg Ile Glu Ile		
195	200	205
Ile Ser Arg Glu Arg Ile Ala Asp Glu Leu Asn Lys Ile Met Leu Ser		
210	215	220
Pro Ile Pro Ser Lys Gly Phe Ile Asp Leu Asp Arg Ser Gly Leu Leu		

225 230 235 240
 Glu Leu Ile Phe Pro Glu Leu Val Ala Leu Gln Gly Val Glu Thr Arg
 245 250 255
 Asn Gly Arg Ala His Lys Asp Asn Phe Tyr His Thr Leu Glu Val Leu
 260 265 270
 Asp Asn Ile Ser Arg Val Thr Asp Asn Leu Trp Leu Arg Trp Ser Ala
 275 280 285
 Leu Leu His Asp Ile Ala Lys Pro Val Thr Lys Arg Trp Glu Pro Lys
 290 295 300
 Ala Gly Trp Thr Phe His Asn His Asn Phe Ile Gly Glu Lys Met Ile
 305 310 315 320
 Pro Asn Ile Phe Arg Lys Met Lys Leu Pro Met Asn Glu Lys Met Lys
 325 330 335
 Tyr Val Gln Lys Met Val Ser Leu His Met Arg Pro Ile Val Ile Ala
 340 345 350
 Asp Asp Val Val Thr Asp Ser Ala Val Arg Arg Leu Leu Phe Glu Ala
 355 360 365
 Gly Asp Asp Ile Asp Asp Leu Met Thr Leu Cys Glu Ala Asp Ile Thr
 370 375 380
 Ser Lys Asn Met Glu Arg Lys Gln Arg Phe Leu Asn Asn Phe Gln Leu
 385 390 395 400
 Val Arg Gln Lys Leu Lys Asp Leu Glu Glu Lys Asp Arg Val Arg Asn
 405 410 415
 Phe Gln Pro Pro Val Ser Gly Glu Glu Ile Met Glu Val Phe Asn Leu
 420 425 430
 Gly Pro Cys Arg Gln Val Gly Ser Leu Lys Ser Ala Ile Lys Asp Ala
 435 440 445
 Ile Leu Asp Gly Val Ile Pro Asn Glu Tyr Glu Ala Ala Tyr Ala Phe
 450 455 460
 Met Leu Gln Lys Ala Ala Lys Met Gly Leu Lys Pro Val Gln Asn Lys
 465 470 475 480
 Glu Val

<210> 7817
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 7817
 His Arg Ala Asp Arg Pro Arg Ile Ser Lys Tyr Arg Arg Ser Thr Gln
 1 5 10 15
 Arg Tyr Arg Cys Lys Asn Tyr Thr Asn Met Ile Lys Arg Glu Asp Val
 20 25 30
 Tyr Lys Ile Gly Leu Phe Asn Lys Pro His Gly Ile His Gly Glu Leu
 35 40 45
 Ser Phe Thr Phe Thr Asp Asp Ile Phe Asp Arg Ala Asp Cys Asp Tyr
 50 55 60
 Leu Ile Cys Arg Leu Asp Asp Ile Phe Val Pro Phe Phe Ile Glu Glu
 65 70 75 80
 Tyr Arg Phe Arg Ser Asp Ser Thr Ala Leu Val Lys Leu Glu Gly Val
 85 90 95
 Asp Thr Ala Glu Arg Ala Arg Met Phe Thr Asn Val Glu Val Tyr Phe
 100 105 110
 Pro Val Lys His Ala Glu Glu Ala Ala Pro Gly Glu Leu Ser Trp Asp
 115 120 125
 Phe Phe Val Gly Phe Arg Val Glu Asp Val Arg His Gly Ala Leu Gly
 130 135 140
 Glu Val Thr Asp Val Asp Thr Ser Thr Val Asn Thr Leu Phe Val Val

145 150 155 160
 Asp Arg Asp Gly Asp Glu Leu Leu Ile Pro Ala Gln Glu Lys Leu Ile
 165 170 175
 Ala Gly Ile Asp Gln Lys His Lys Ile Ile Thr Val Asp Leu Pro Glu
 180 185 190
 Gly Leu Leu Ser Leu Asp Glu Cys Asp Asp Glu Glu Ser
 195 200 205

<210> 7818
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 7818
 Asn His Lys Glu Leu Phe Tyr Gly Ser Ala Thr Lys Ile Asn Lys Ile
 1 5 10 15
 Gly Leu Leu Arg Leu Gly Glu Val Val Ile Tyr Lys Phe Phe Tyr Thr
 20 25 30
 Leu Lys Leu Asp Gly Glu Gly Val Glu Gly Arg Leu His His Arg Phe
 35 40 45
 His Arg Ser Thr Ser Asn Val Ile Val Asp Ser Pro Ser Asp Lys Pro
 50 55 60
 Leu Ile Phe Val Gln Ser Val Val Ile Ser Thr Leu Val Tyr Leu Tyr
 65 70 75 80
 Leu Phe Gln Phe Asp Asn Pro Leu Ile Thr Ala Ser Ser Glu Phe Gln
 85 90 95
 Met Arg

<210> 7819
 <211> 404
 <212> PRT
 <213> B.fragilis

<400> 7819
 Thr Glu Lys Glu Asn Asn Lys Asn Phe Asn Asn Tyr Met Lys Arg Ile
 1 5 10 15
 Thr Ile Leu Ala Ala Thr Leu Phe Ala Leu Ser Gly Leu Gln Ala Gln
 20 25 30
 Thr Ser Ile Asp Gly Val Leu Arg Asn Ile Glu Thr Asn Asn Lys Glu
 35 40 45
 Leu Gln Ala Asn Ala Gln Leu Ile Ala Ser Gln Lys Leu Glu Thr Arg
 50 55 60
 Thr Asp Asn Asn Leu Pro Asp Pro Thr Leu Ser Tyr Ala His Leu Trp
 65 70 75 80
 Asn Asn Lys Asp Lys Asn Asn Thr Ile Gly Glu Leu Val Val Ser Gln
 85 90 95
 Ser Phe Asp Phe Pro Ser Leu Tyr Ala Thr Arg Ser Gln Leu Asn Arg
 100 105 110
 Leu Lys Ala Gly Ala Phe Asp Gly Gln Lys Ser Val Phe Arg Gln Gly
 115 120 125
 Ile Leu Leu Gln Ala Lys Asp Val Cys Leu Asp Ile Ile Met Leu Arg
 130 135 140
 Lys Gln Gln Gln Ile Leu Thr Glu Arg Leu Arg Asn Ala Glu Glu Leu
 145 150 155 160
 Ser Ala Met Tyr Ala Lys Arg Leu Gln Thr Gly Asp Ala Asn Val Ile
 165 170 175
 Glu Thr Asn Lys Ile Asn Leu Glu Leu Leu Asn Val Lys Thr Glu Ala
 180 185 190

Ser Leu Asn Glu Thr Ala Leu Arg Asn Lys Ile Gln Glu Leu Thr Ala
 195 200 205
 Leu Asn Gly Asn Ile Pro Val Val Phe Glu Asp Ala Asp Tyr Pro Ala
 210 215 220
 Val Ile Phe Pro Ser Asn Tyr Glu Glu Leu Lys Thr Glu Val Leu Ala
 225 230 235 240
 Ser Asp Tyr Thr Leu Gln Ala Leu Asn Ser Glu Ser Ala Ala Ala Arg
 245 250 255
 Lys Gln Ile Ala Val Asn Lys Ser Gln Trp Leu Pro Lys Leu Glu Leu
 260 265 270
 Gly Tyr Arg Arg Asn Thr Glu Ser Gly Glu Pro Phe Asn Gly Val Val
 275 280 285
 Val Gly Phe Ser Phe Pro Leu Phe Glu Asn Arg Asn Lys Val Lys Ile
 290 295 300
 Ala Lys Ala Gln Ser Leu Asn Val Asp Leu Gln Arg Ala Asn Thr Ser
 305 310 315 320
 Val Gln Val Glu Ser Glu Leu Thr Gln Leu Tyr Arg Glu Ala His Thr
 325 330 335
 Leu Arg Thr Ser Met Glu Glu Tyr Glu Lys Thr Phe Gln Ala Gln Gln
 340 345 350
 Asp Leu Ser Leu Leu Lys Gln Ala Leu Thr Gly Gly Gln Ile Ser Met
 355 360 365
 Ile Glu Tyr Phe Val Glu Val Ser Val Val Tyr Gln Ser Lys Gln Asn
 370 375 380
 Tyr Leu Gln Leu Glu Asn Gln Tyr Gln Lys Ala Met Ala Lys Ile Tyr
 385 390 395 400
 Lys Asn Lys Leu

<210> 7820
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 7820
 Thr Ser Met Glu His Lys Lys Thr Lys Ile Val Leu Tyr Ala Asp Val
 1 5 10 15
 Ile Ile His Phe Met Glu Ala Asn Tyr Phe Ser Ile Leu Pro Asp Ile
 20 25 30
 Phe Pro Glu Tyr Glu Tyr Leu Ile Leu Asp Val Val Tyr Asn Glu Ile
 35 40 45
 Ser Gln Asn Ser Gly Thr Lys Asp Phe Ile Asp Lys Tyr Leu His Phe
 50 55 60
 Phe Pro Lys Leu Lys Lys Glu Val Phe Ser Pro Lys Arg Glu Ser Met
 65 70 75 80
 Lys Glu Phe Phe Leu Leu Gln Arg Thr Leu Gly Lys Gly Glu Ser Ala
 85 90 95
 Cys Met Ile Tyr Cys Arg Asp Asn Arg Asp Val Leu Gly Ser Ser Asn
 100 105 110
 Leu Lys Asp Ile Lys Glu Tyr Cys Ser Lys Asn Asn Ile Thr Tyr Leu
 115 120 125
 Thr Thr Leu Asp Phe Leu Tyr Tyr Ala Tyr Cys Arg Lys Lys Met Thr
 130 135 140
 Glu Gln Glu Cys Lys Glu Phe Met Gln Glu Val Asn Asn Ala Gly Ser
 145 150 155 160
 Lys Leu Pro Ile Ile Asp Ile Thr Gln Tyr Thr Cys Thr Val Gln Ile
 165 170 175

<210> 7821

<211> 300
 <212> PRT
 <213> B.fragilis

<400> 7821

Lys Met Ile Leu Gln Thr Ile Lys Gln Ile Ser Cys Leu Leu Cys Leu
 1 5 10 15
 Cys Cys Phe Leu Gln Gln Ser Ala Phe Ser Gln Asp Asp Lys Asp Lys
 20 25 30
 Pro Ala Tyr Thr Leu Phe Asp Asn Thr Gly Lys Gln Ile Ser Tyr Gly
 35 40 45
 Glu Leu Ile Lys Arg Leu Ser Gly Tyr Asp Val Ile Phe Leu Gly Glu
 50 55 60
 Leu His Asn Cys Pro Ile Thr His Trp Leu Glu Phe Glu Ile Thr Arg
 65 70 75 80
 Ser Ile Tyr Asn Ile His Lys Asp Gln Leu Met Leu Gly Ala Glu Met
 85 90 95
 Phe Glu Ser Asp Asn Gln Leu Ile Phe Asp Glu Tyr Met Gln Gln Lys
 100 105 110
 Ile Ser Tyr Asp Arg Phe Glu Ala Glu Ala Arg Leu Trp Asp Asn Tyr
 115 120 125
 Arg Thr Asp Tyr Tyr Pro Val Phe Phe Ala Lys Glu His His Ile
 130 135 140
 Pro Phe Ile Ala Thr Asn Ile Pro Arg Arg Tyr Ala Asn Ile Val Lys
 145 150 155 160
 Asn Lys Gly Phe Glu Ala Leu Asp Ser Leu Ser Glu Glu Ala Lys Arg
 165 170 175
 Tyr Ile Ala Pro Leu Pro Ile Asp Phe Glu Tyr Asp Glu Ala Gln Ser
 180 185 190
 Ala Ala Ala Phe Ser Met Met Asn Met Met Gly Gly Arg Arg Ala Gly
 195 200 205
 Asp Asn Arg Lys Leu Ala Gln Ala Gln Ala Ile Lys Asp Ala Thr Met
 210 215 220
 Gly Trp Phe Ile Ala Arg Asn Ile Lys Asn Lys Phe Leu His Ile Asn
 225 230 235 240
 Gly Ser Tyr His Ser Asn Arg Gln Gly Gly Ile Ile Pro Tyr Leu Leu
 245 250 255
 Arg Tyr Arg Pro Asn Thr Ser Ile Val Thr Val Thr Ser Val Arg Gln
 260 265 270
 Glu Ser Ile Arg Lys Leu Asp Asp His Lys Gly Leu Ala Asp Phe
 275 280 285
 Tyr Ile Cys Val Pro Glu Asp Met Val Asn Ser Tyr
 290 295 300

<210> 7822
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 7822

Tyr Val Val Cys Phe Cys Tyr Leu Tyr Ala Ile Val Lys Phe Arg Leu
 1 5 10 15
 Phe Ile Asn Leu Lys Leu Lys Asn Met Lys Asp Leu Glu Asp Asp Glu
 20 25 30
 Arg Glu Phe Pro Ile Arg Val Tyr Thr Lys Val Glu Leu Ala Leu Leu
 35 40 45
 Tyr Ala Pro His Leu Ser Glu Asn Ala Ala Leu Asn Asn Leu Ser Arg
 50 55 60
 Trp Met Arg His Asn Lys Leu Leu Met Ala Ala Leu Glu Glu Val Gly

65					70					75				80
Tyr	Tyr	Lys	Tyr	Arg	His	Ser	Phe	Thr	Pro	Lys	Glu	Val	Arg	Leu
				85					90					95
Phe	Arg	Tyr	Met	Gly	Glu	Pro	Gly	Ala						
			100					105						

<210> 7823
 <211> 295
 <212> PRT
 <213> B.fragilis

<400> 7823

Leu	Val	Thr	Cys	Asn	Ile	Gln	Asn	Met	Lys	Gly	Ile	Ile	Leu	Ala	Gly
1				5					10					15	
Gly	Ser	Ala	Thr	Arg	Leu	Tyr	Pro	Leu	Ser	Lys	Ala	Ile	Ser	Lys	Gln
			20					25					30		
Met	Met	Pro	Val	Tyr	Asp	Lys	Pro	Met	Ile	Tyr	Tyr	Pro	Leu	Ser	Thr
		35					40					45			
Leu	Met	Leu	Ala	Gly	Ile	Arg	Glu	Val	Leu	Val	Ile	Ser	Thr	Pro	Arg
	50					55					60				
Asp	Leu	Pro	Leu	Phe	Arg	Glu	Leu	Leu	Gly	Ser	Gly	Glu	Glu	Phe	Gly
65					70					75					80
Met	Ser	Phe	Ser	Tyr	Leu	Val	Gln	Glu	Gln	Pro	Asn	Gly	Leu	Ala	Gln
				85					90					95	
Ala	Phe	Val	Leu	Gly	Ala	Asp	Phe	Leu	Asn	Gly	Glu	Pro	Gly	Cys	Leu
			100					105					110		
Ile	Leu	Gly	Asp	Asn	Leu	Phe	Tyr	Gly	Gln	Gly	Phe	Ser	Ala	Met	Leu
		115					120					125			
Arg	Arg	Ala	Ala	Thr	Ile	Glu	Lys	Gly	Ala	Cys	Ile	Phe	Gly	Tyr	Tyr
		130					135				140				
Val	Lys	Asp	Pro	Arg	Ala	Tyr	Gly	Val	Val	Glu	Phe	Asp	Gly	Ser	Gly
145					150					155					160
Lys	Val	Val	Ser	Leu	Glu	Glu	Lys	Pro	Ala	Val	Pro	Lys	Ser	Asn	Tyr
			165					170						175	
Ala	Val	Pro	Gly	Leu	Tyr	Phe	Tyr	Asp	Ala	Thr	Val	Thr	Glu	Lys	Ala
			180					185					190		
Leu	Ala	Leu	Glu	Pro	Ser	Ala	Arg	Gly	Glu	Tyr	Glu	Ile	Thr	Asp	Leu
		195					200					205			
Asn	Lys	Leu	Tyr	Leu	Asp	Glu	Gly	Thr	Leu	Lys	Val	Glu	Leu	Phe	Gly
		210				215					220				
Arg	Gly	Phe	Ala	Trp	Leu	Asp	Thr	Gly	Asn	Cys	Asn	Ser	Leu	Leu	Glu
225					230					235					240
Ala	Ser	Asn	Phe	Val	Ala	Thr	Ile	Gln	Asn	Arg	Gln	Gly	Phe	Tyr	Val
			245						250					255	
Ser	Cys	Ile	Glu	Glu	Ile	Ala	Trp	Arg	Asn	Gly	Trp	Ile	Ser	Ser	Ala
			260					265					270		
Gln	Leu	Lys	Ala	Leu	Gly	Glu	Lys	Leu	Glu	Lys	Thr	Glu	Tyr	Gly	Lys
		275					280					285			
Tyr	Leu	Ile	Asp	Leu	Ala	Asn									
		290				295									

<210> 7824
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 7824

Lys	Ile	His	Cys	Ile	Leu	Ile	Met	Asn	Glu	Ile	Lys	Lys	Lys	Gln	Ile
1				5					10					15	

Ala Ile Leu Gly Ser Thr Gly Ser Ile Gly Thr Gln Ala Leu Gln Val
 20 25 30
 Ile Glu Glu His Pro Glu Leu Tyr Glu Val Tyr Ala Leu Thr Ala Asn
 35 40 45
 Asn Lys Val Asp Leu Leu Ile Ala Gln Ala Arg Lys Phe Met Pro Glu
 50 55 60
 Ala Val Val Ile Ala Asn Glu Glu Lys Tyr Ala Gln Leu Lys Glu Ala
 65 70 75 80
 Leu Ser Asp Leu Pro Val Lys Val Tyr Ala Gly Ala Ala Ala Leu Cys
 85 90 95
 Gln Ile Val Glu Ser Gly Pro Ile Asp Val Val Leu Thr Ala Met Val
 100 105 110
 Gly Tyr Ala Gly Leu Lys Pro Thr Met Asn Ala Ile Arg Ala Gly Lys
 115 120 125
 Ala Ile Ala Leu Ala Asn Lys Glu Thr Leu Val Val Ala Gly Glu Leu
 130 135 140
 Ile Asn Gln Leu Ala Arg Gln Tyr Arg Thr Pro Ile Leu Pro Val Asp
 145 150 155 160
 Ser Glu His Ser Ala Val Phe Gln Cys Leu Thr Gly Glu Val Gly Asn
 165 170 175
 Pro Ile Glu Lys Val Ile Leu Thr Ala Ser Gly Gly Pro Phe Arg Thr
 180 185 190
 Cys Thr Met Glu Gln Leu Lys Thr Val Thr Lys Val Gln Ala Leu Lys
 195 200 205
 His Pro Asn Trp Glu Met Gly Ala Lys Ile Thr Ile Asp Ser Ala Ser
 210 215 220
 Met Met Asn Lys Gly Phe Glu Val Ile Glu Ala Lys Trp Leu Phe Gly
 225 230 235 240
 Val Gln Pro Gly Gln Ile Glu Val Val Val His Pro Gln Ser Val Ile
 245 250 255
 His Ser Met Val Gln Phe Glu Asp Gly Ala Ile Lys Ala Gln Leu Gly
 260 265 270
 Met Pro Asp Met Arg Leu Pro Ile Gln Tyr Ala Phe Ser Tyr Pro Asp
 275 280 285
 Arg Ile Asn Ser Ser Phe Asp Arg Leu Asp Phe Ser Lys Cys Thr Asn
 290 295 300
 Leu Thr Phe Glu Gln Pro Asp Thr Lys Arg Phe Arg Asn Leu Ala Leu
 305 310 315 320
 Ala Tyr Glu Ser Met Tyr Arg Gly Gly Asn Met Pro Cys Ile Val Asn
 325 330 335
 Ala Ala Asn Glu Val Val Val Ala Ala Phe Leu Arg Asp Glu Ile Ser
 340 345 350
 Phe Leu Gly Met Ser Asp Val Ile Glu His Thr Met Gly Gln Val Ser
 355 360 365
 Phe Val Gln Thr Pro Thr Tyr Asp Glu Tyr Val Ala Thr Asp Ala Glu
 370 375 380
 Ala Arg Arg Ile Ala Arg Glu Leu Ile Cys Lys
 385 390 395

<210> 7825

<211> 292

<212> PRT

<213> B.fragilis

<400> 7825

Asn Glu Ser Cys Gly Ile His Phe Cys Ser Val Arg Asp Ala Leu Leu
 1 5 10 15
 Leu His Gln Ile Gln Lys Gln Gly Asn Tyr Arg His Lys Met Lys Lys
 20 25 30

Ile Glu Cys Ile Ile Met Asp Trp Ala Gly Thr Ala Val Asp Tyr Gly
 35 40 45
 Cys Phe Ala Pro Val Ala Ala Phe Ile Lys Ala Phe Ala Gly Lys Gly
 50 55 60
 Leu Thr Ile Asp Val Glu Gln Thr Arg Lys Pro Met Gly Leu Pro Lys
 65 70 75 80
 Ile Gln His Ile Arg Glu Leu Leu Thr Met Pro Glu Val Asn Glu Gln
 85 90 95
 Phe Ile Asn Arg Tyr Arg Arg Ala Trp Thr Glu Glu Asp Val Val Glu
 100 105 110
 Leu Asn His Leu Phe Glu Lys Tyr Leu Phe Ala Ser Leu Lys Glu Tyr
 115 120 125
 Thr Asp Pro Ile Pro Gly Val Ile Pro Thr Leu Glu Lys Leu Arg Ala
 130 135 140
 Glu Gly Leu Lys Ile Gly Ser Thr Thr Gly Tyr Thr Arg Glu Met Met
 145 150 155 160
 Asp Val Val Leu Pro Glu Ala Gln Ala Lys Gly Tyr Arg Val Asp Tyr
 165 170 175
 Cys Ala Thr Pro Asn Leu Leu Pro Ala Gly Arg Pro Ala Pro Tyr Met
 180 185 190
 Ile Phe Glu Asn Leu Thr Lys Leu Ala Val Pro Asp Pro Asp Thr Val
 195 200 205
 Val Lys Val Gly Asp Thr Ile Val Asp Ile Gln Glu Gly Val His Ala
 210 215 220
 Lys Val Trp Ser Val Gly Val Val Leu Gly Ser Asn Glu Met Ala Leu
 225 230 235 240
 Thr Glu Glu Glu Thr His Ala Leu Pro Ala Ala Glu Leu Glu Asn Arg
 245 250 255
 Ile Ala Glu Val Lys Gln Arg Met Leu Ala Ala Gly Ala Ser Tyr Val
 260 265 270
 Ile Arg Ser Ile Glu Glu Leu Pro Ala Leu Ile Gln Leu Ile Asn Ser
 275 280 285
 Lys Leu Asn His
 290

<210> 7826
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 7826
 Ser Glu Val Arg Phe Phe Ile Ser Arg Met Asp Ser Ser Gly Glu Ser
 1 5 10 15
 Trp Asp Thr Cys Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Arg Pro
 20 25 30
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Ala Thr Gln Phe
 35 40 45
 Glu Glu Glu Pro Phe Ser Tyr Val Phe Gly Cys Arg Thr Phe Val Ile
 50 55 60
 Glu Ile Pro Asp Ser Lys Ile Ile Met Ala Glu Asn Ser Lys Gln Phe
 65 70 75 80
 Leu Leu Thr Lys Met Ser Phe Leu Ser Ile Tyr Ser Asp Tyr Leu Lys
 85 90 95
 Ile Ile Pro Tyr Phe Cys Thr Lys Leu Leu Val Ile
 100 105

<210> 7827
 <211> 95
 <212> PRT

<213> B.fragilis

<400> 7827

Lys Arg Asn Arg Met Lys Lys Leu Val Phe Cys Ala Ala Phe Val Ala
 1 5 10 15
 Ala Met Cys Met Ala Gly Thr Thr Thr Ala Gln Ala Gln Asp Val Lys
 20 25 30
 Lys Lys Glu Val Lys Lys Glu Gln Cys Asp Lys Lys Asp Ser Lys Ala
 35 40 45
 Cys Cys Lys Lys Glu Lys Lys Ala Cys Cys Lys Lys Glu Ala Asp Lys
 50 55 60
 Lys Thr Thr Asp Gly Cys Lys His Lys Ala Asp Cys Lys Ala Lys Ala
 65 70 75 80
 Gly Cys Lys Asp Ser Lys Cys Thr Lys Asp Lys Gly Gly Lys Lys
 85 90 95

<210> 7828

<211> 562

<212> PRT

<213> B.fragilis

<400> 7828

Ile Asn Lys Arg Arg Asn His His Arg Leu His Lys Tyr Gln Trp Phe
 1 5 10 15
 Ile Gly Arg Thr Ile Asn Asp Asn Ile Gly Ser Arg Ser Val Lys Ser
 20 25 30
 Val Val Lys Thr Thr Phe His Ser Leu Pro Ile Lys Phe Gln Cys Val
 35 40 45
 Lys Lys Leu Ile Tyr His Tyr Leu Pro Gln Pro Lys Lys Ser Asp Phe
 50 55 60
 Val Tyr Phe Cys Ser Thr Ser Ile Lys Lys Phe Phe Met Ile Leu His
 65 70 75 80
 Thr Gln Thr Pro Val Val Asp Glu Thr Asp Gly Leu Pro Leu Pro His
 85 90 95
 Arg Ile Trp Ala Val Val Gly Ile Ser Phe Ala Leu Cys Met Ser Val
 100 105 110
 Leu Asp Ile Asn Ile Ile Asn Val Val Leu Pro Thr Leu Ser His Asp
 115 120 125
 Phe Gly Thr Ser Pro Ala Val Thr Thr Trp Ile Ile Asn Gly Tyr Gln
 130 135 140
 Leu Ala Ile Val Ile Ser Leu Leu Ser Phe Ser Ser Leu Gly Glu Ile
 145 150 155 160
 Tyr Gly Tyr Arg Lys Ile Phe Leu Ser Gly Ile Ala Met Phe Ile Val
 165 170 175
 Thr Ser Leu Ile Cys Ala Leu Ser His Ser Phe Trp Thr Leu Thr Ile
 180 185 190
 Ala Arg Ile Phe Gln Gly Phe Ser Ala Ser Ala Ile Thr Ser Val Asn
 195 200 205
 Thr Ala Gln Leu Arg Thr Ile Tyr Pro Arg Lys Gln Ile Gly Arg Gly
 210 215 220
 Met Gly Ile Asn Ala Met Val Val Ala Ile Ser Ala Ala Ala Gly Pro
 225 230 235 240
 Ser Val Ala Ser Gly Ile Leu Phe Val Ala Ser Trp His Trp Leu Phe
 245 250 255
 Ala Ile Asn Val Pro Leu Gly Leu Val Ala Leu Thr Leu Gly Leu Lys
 260 265 270
 Tyr Leu Pro Arg Lys Glu Glu Arg Ser Asn Arg Lys Phe Asp Lys Leu
 275 280 285
 Ser Ala Ile Ala Asn Ala Ile Thr Phe Gly Leu Leu Ile Tyr Thr Leu

290 295 300
 Asp Gly Phe Ala His His Glu Asn Asn Asp Tyr Ile Val Ile Gln Leu
 305 310 315 320
 Ala Val Leu Ala Val Val Gly Thr Tyr Tyr Val Arg Arg Gln Leu Asn
 325 330 335
 Gln Pro Ser Pro Leu Leu Pro Leu Asp Leu Leu Gly Ile Pro Ile Phe
 340 345 350
 Arg Leu Ser Ile Leu Thr Ser Ile Cys Ser Phe Thr Ala Gln Met Leu
 355 360 365
 Ala Met Val Ser Leu Pro Phe Phe Leu Gln Asn Ser Leu Gly Tyr Ser
 370 375 380
 Glu Val Met Thr Gly Leu Leu Leu Thr Pro Trp Pro Tyr Ser His Thr
 385 390 395 400
 Gly Asp Ser Thr Gly Ser Arg Ile Ser Gly Gly Thr His Ser Ser Arg
 405 410 415
 His Thr Gly Gln His Arg Asp Gly Ile Val Leu Tyr Arg Thr Leu Leu
 420 425 430
 Ser Val Tyr Ile Asn Gly Gly Phe Ile Gly His Arg His His Pro Ala
 435 440 445
 Ile Asp Ala Leu Trp Cys Arg Phe Arg Ser Phe Pro Asp Thr Glu Gln
 450 455 460
 Gln Tyr Asn His Leu Phe Arg Pro Tyr Pro Thr Phe Gly Arg Ser Gln
 465 470 475 480
 Arg Asn Val Gly Tyr Gly Thr Ala Leu Gly Thr Asp Ile Arg Tyr Asp
 485 490 495
 Thr Gly Cys Phe Ala Leu Gln Phe Cys Ser Thr Arg Glu Glu Tyr Gly
 500 505 510
 Gly Leu Ser Asp Ser Arg Gln Arg Ile Cys Val Cys Arg Ser Ser Gly
 515 520 525
 Lys Gln His Ala Ala Phe Thr Thr Leu His Ile Lys Asp Glu Ala Pro
 530 535 540
 Ile Thr Ile Ser Ile His Val Tyr Arg Pro Thr Gly Ser Gln Ser Asn
 545 550 555 560
 Thr Lys

<210> 7829
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 7829
 Thr Ser Val Ser Met Lys Trp Glu Ser Ser Leu Val Glu His Leu Gln
 1 5 10 15
 Trp Ser Asp Thr Ile Thr Asn Arg Glu Ser Lys Glu Gln Leu Ala Arg
 20 25 30
 Met Ile Ala Met Arg Val Gln Glu Gly Glu Ile Ile Gly Ala Gly Ser
 35 40 45
 Gly Ser Thr Val Tyr Leu Ala Leu Leu Ala Ile Ala Glu Arg Ile Arg
 50 55 60
 Thr Glu Asn Leu His Val Thr Val Ile Pro Ala Ser Met Glu Ile Ser
 65 70 75 80
 Met Glu Cys Val Arg Leu Gly Ile Pro Gln Thr Thr Leu Trp Met Cys
 85 90 95
 Arg Pro Asp Trp Thr Phe Asp Gly Ala Asp Glu Val Asp Pro Asp His
 100 105 110
 Asn Leu Ile Lys Gly Arg Gly Gly Ala Leu Phe Lys Glu Lys Leu Leu
 115 120 125
 Ile Cys Ser Ser Asn Arg Thr Phe Ile Leu Val Asp Glu Ser Lys Gln

130		135		140
Val Ser Phe Leu Gly	Ser Arg Phe Pro Val	Pro Ile Glu Val Phe Pro		
145	150	155	160	
Met Ala Leu Pro Tyr	Val Glu Arg Glu Val	Leu Thr Met Gly Ala Leu		
	165	170	175	
Arg Thr Glu Leu Arg	Leu Ala Lys Gly Lys	Asp Gly Pro Val Ile Thr		
	180	185	190	
Glu Asn Gly Asn Leu	Ile Leu Asp Ala Trp	Phe Gly Asn Ile His Ser		
	195	200	205	
Ser Leu Glu Lys Glu	Ile Lys Ser Ile Thr	Gly Val Val Glu Asn Gly		
	210	215	220	
Leu Phe Met Gly Tyr	Asp Val Glu Val Met	Val Ala Lys		
225	230	235		

<210> 7830

<211> 701

<212> PRT

<213> B.fragilis

<400> 7830

Gly Met Asn Arg	Met Lys Cys Gly	Phe Tyr Thr Tyr	Arg Gly Ile Ala
1	5	10	15
Phe Cys Phe Val	Ala Ala Met Phe	Cys Gly Gln Thr	Met Ala Gln Val
	20	25	30
Val Glu Lys Arg	Gly Phe Asp Ser	Gln Lys Lys Ile	Asn Ala Phe Asp
	35	40	45
Asn Thr Thr Phe	Cys Thr Ala Tyr	Leu Ser Asp Gly	Ala Leu Tyr Thr
	50	55	60
Met Arg Asp Ile	Ala Ile Asn Asp	Val Arg Lys Ile	Glu Arg Ile Val
	65	70	75
Phe Asn Pro Thr	Gly Ser Ser Ile	Ala Leu Leu Arg	Ala Lys Asn Pro
	85	90	95
Ile Ser Ile Tyr	Ser Phe Arg Asp	Arg Asn Lys Lys	Leu Phe Glu Leu
	100	105	110
Lys Glu Lys Arg	Lys Lys Leu Lys	Ala Lys Pro Met	Pro Val Ser Met
	115	120	125
Cys Tyr Ser Ala	Asp Ala Arg Ser	Phe Ile Val Gly	Asn Ser Leu Gly
	130	135	140
Glu Ile Val Ile	Tyr Asp Thr Lys	Glu Tyr Met Pro	Leu Ala Tyr Ile
	145	150	155
Gln Gly Glu Ala	Pro Ala Thr Ala	Leu Ala Met Ser	Ser Asn Asn Tyr
	165	170	175
Phe Ile Ala Ala	Ala Ala Gly Gln	Asn Ile Asn Ile	Trp Asn Phe Gln
	180	185	190
Thr Lys Glu Leu	Arg Lys Ala Ile	Pro Met Pro Ala	Val Val Lys Glu
	195	200	205
Val Thr Phe Ser	Pro Asp Ala Ala	Leu Leu Ala Val	Thr Thr Asp Asp
	210	215	220
Asn His Leu Thr	Ile Ile Asp Thr	Lys Asn Trp Asp	Lys Val Asp Ile
	225	230	235
Phe Asp Lys Leu	Gly Gly Thr Leu	Ser Ser Pro Ser	Phe His Pro Glu
	245	250	255
Gly Lys Tyr Ile	Ser Val Val Lys	Asp Gly Lys Asn	Ile Glu Ile Ile
	260	265	270
Asn Leu Lys Asn	Gly Val Val Glu	Gln Asp Ile Val	Asp Pro Ile Gly
	275	280	285
Asp Val Thr Gly	Gly Arg Phe Phe	Lys Asn Asn Gln	Asn Ser Glu Val
	290	295	300
Phe Leu Leu Thr	Asn Arg Thr Lys	Gln Met Val Phe	Trp Asp Ala Asn

305 310 315 320
 Gly Leu Asn Pro Phe Tyr Gly Lys Ile Met Gly Arg Glu Val Asp Ala
 325 330 335
 Lys Met Asn Glu Trp Val Lys Met Met Gln Gly Glu Ser Met Glu Asp
 340 345 350
 Tyr Ala Ile Arg Val Asn Asp Glu Thr Arg Ile Lys Gln Gln Gln Leu
 355 360 365
 Phe Ala Gln Glu Val Ala Thr Ala Leu Ala Gly Asp Arg Ile Ser Met
 370 375 380
 Asp Asn Pro Phe Ile Asp Gly Tyr Asp Ala Ser Asn Asn Met Leu Asn
 385 390 395 400
 Ile Gly Phe Lys Gly Leu Pro Ser Ile Gly Leu Glu Val Pro Ser Asn
 405 410 415
 Glu Ala Gly Asp Phe Lys Asp Gly Lys Met Lys Phe Ser Asn Ala Val
 420 425 430
 Tyr Val Leu Asn Asp Lys Asp Glu Phe Glu Leu Ala Tyr Val Glu Val
 435 440 445
 Thr Asn Glu Thr Thr Asn Lys Val Tyr Ile Tyr Asp Asn Ile Gly Arg
 450 455 460
 Thr Lys Leu Thr Ala Leu Glu Ala Asp Glu Asn Phe Val Pro Leu Glu
 465 470 475 480
 Ile Met Gln Gln Ala Thr Arg Glu Glu Ala Gln Leu Ala Glu Ile Lys
 485 490 495
 Glu Gln Val Ile Glu Glu Lys Lys Gln Asp Lys Leu Ile Thr Asp Asn
 500 505 510
 Thr Gln Ile Asn Val Lys Thr Glu Val Ile Pro Gly Val Asp Ala Asn
 515 520 525
 Gly Lys Lys Ile Leu Asn Tyr Lys Val Gly Tyr Gln Tyr Glu Val Ile
 530 535 540
 Asn Lys Glu Phe Ser Ala Lys Glu Asp Phe Pro Ser Gly Gly Tyr Asn
 545 550 555 560
 Ile Glu Arg Ser Asn Ala Ala Met Ser Leu Met Lys Ile Ile Lys Asn
 565 570 575
 Ala Phe Glu Gly Asp Phe Ala Lys Tyr Leu Ser Glu Gly Lys Gln Val
 580 585 590
 Lys Val Ile Ile Thr Gly Ser Ala Asp Ala Ala Pro Ile Arg Gly Arg
 595 600 605
 Leu Ala Tyr Asp Gly Arg Tyr Gly Glu Phe Val Asp Glu Pro Tyr Tyr
 610 615 620
 Lys Asp Gly Asn Leu Asp Asn Ile Thr Val Thr Lys Ala Gly Gly Ile
 625 630 635 640
 Thr Gln Asn Glu Gln Leu Ala Leu Met Arg Ala Ala Gly Val Lys Thr
 645 650 655
 Tyr Ile Glu Lys Asn Val Thr Thr Leu Gly Asn Thr Lys Asn Glu Tyr
 660 665 670
 Glu Tyr His Val Glu Val Ala Lys Glu Arg Gly Gly Glu Phe Arg Lys
 675 680 685
 Ile Asn Val Glu Phe Val Ile Met Asp Ala Phe Gln Gln
 690 695 700

<210> 7831

<211> 138

<212> PRT

<213> B.fragilis

<400> 7831

Ser Lys Leu Arg Met Arg Asn Lys Arg Tyr Ile Val Ser Phe Leu Leu
 1 5 10 15
 Phe Ile Ser Met Ile Met Leu Val Val Pro Val Ile Pro His His His

20	25	30
His Ala Asp Gly Val Ile Cys Met Lys Asn Asp Leu Thr Pro Glu Pro		
35	40	45
Gln Cys Pro Lys His Tyr His His Pro Gly Asn Asp Ser Cys Cys Asn		
50	55	60
Asp Gly Cys Met Thr Arg Leu Asn Ser Pro Thr Pro Ser Val Gln Ala		
65	70	75
Asp Asn Asn Pro His Tyr Leu Phe Thr Ala Ile Leu Phe Thr Asp Phe		
85	90	95
Ile Ile Glu Asn Leu Phe Arg Pro Gln Glu Arg Arg Ile Lys Asn Tyr		
100	105	110
Tyr Ala Tyr Arg Glu Ser Leu His Gly Thr Ala Val Asn Arg Ala Phe		
115	120	125
Gly Leu Arg Ala Pro Pro Tyr Pro Val Val		
130	135	

<210> 7832
 <211> 99
 <212> PRT
 <213> B.fragilis

<400> 7832

Cys Thr Ile Arg Ile Pro Lys Ile Ala Glu Lys Asn Asn Pro Met His	
1	15
Ser Phe Glu Gln Thr Glu Val Gln Ile Gln Asn Val Gly Lys Leu Lys	
20	30
Ile Ile Arg Arg Ile Leu Ser Ser Ile Lys Phe Leu Ile Ser Lys Ile	
35	45
Ser Thr Ala His Phe Ile Asn Pro Lys Glu Ser Asn Ile Lys Gly Lys	
50	60
Leu Asp Thr Thr Leu Asn Pro Pro Lys Thr Leu Pro Ser Ile Pro Pro	
65	80
Lys Asn Leu Ile Lys Ser Val Glu Glu Val Asn Gly Asn Gly Ile Pro	
85	95
Glu Val Ile	

<210> 7833
 <211> 373
 <212> PRT
 <213> B.fragilis

<400> 7833

Cys Thr Lys Arg Met Lys Phe Gln Ile Ser Gly Phe Lys Val Ser Arg	
1	15
Phe Trp Phe Ile Tyr Phe Val Val Arg Leu Phe Tyr Leu Leu Phe Ser	
20	30
Val Leu Val Phe Pro Thr Leu Thr Thr Phe Gly Asp Pro Ile His Tyr	
35	45
Met Thr Ser Gly Ile Pro Phe Pro Phe Thr Ser Ser Thr Asp Leu Met	
50	60
Arg Phe Leu Gly Gly Ile Leu Gly Ser Val Leu Gly Gly Phe Asn Val	
65	80
Val Ser Asn Phe Pro Phe Met Leu Leu Ser Phe Gly Leu Ile Lys Trp	
85	95
Ala Val Asp Ile Leu Asp Ile Arg Asn Leu Ile Asp Asp Lys Ile Leu	
100	110
Leu Ile Ile Leu Ser Leu Pro Thr Phe Cys Ile Trp Thr Ser Val Cys	
115	125

Ser Lys Glu Cys Ile Gly Leu Phe Phe Ser Ala Ile Leu Gly Ile Leu
 130 135 140
 Ile Val His Tyr Leu Asn Gly Asn Phe Lys Ile His Phe Arg Asp Tyr
 145 150 155 160
 Val Ala Phe Ser Leu Cys Leu Phe Phe Lys Pro Gln Tyr Leu Pro Phe
 165 170 175
 Ile Val Ser Thr Leu Phe Tyr Leu Arg Phe Ala Phe Gly Leu His Ser
 180 185 190
 Arg Arg Arg Leu Ile Ile Leu Ser Val Phe Tyr Val Ser Ala Ile Ile
 195 200 205
 Phe Val Leu Tyr Leu Ser Arg Asp Leu Ile Asp Leu Tyr Ser Leu Gly
 210 215 220
 Val Gln Lys Ala Phe Glu Phe Asp Ser Gln Phe Ser Asn Ser Thr Arg
 225 230 235 240
 Asp Thr Leu Phe Phe Val Asn Lys Tyr Asp Tyr Phe Ser Lys Ala Pro
 245 250 255
 Met Gly Ile Phe Ile Ala Phe Trp Gly Pro Thr Leu Thr Glu Ala Leu
 260 265 270
 Gln Lys Pro Phe Gln Met Ala Val Tyr Ile Glu Ser Phe Val Val Leu
 275 280 285
 Cys Val Phe Ile Tyr Phe Leu Lys Thr Pro Leu Lys Lys Leu Ile Val
 290 295 300
 Asn Gly Ile Val Asn Leu Arg Leu Ile Val Ser Tyr Ser Ile Leu Phe
 305 310 315 320
 Leu Gly Ile Leu Leu Val His Tyr Pro Phe Gly Val Phe Asn Ala Gly
 325 330 335
 Ser Ala Thr Arg Tyr Arg Thr Asn Tyr Leu Phe Leu Phe Ile Ile Leu
 340 345 350
 Leu Met Tyr Leu Phe Ser Tyr Tyr Arg Lys Lys Asn Asp Lys Val Asp
 355 360 365
 Thr Leu Phe Gly Cys
 370

<210> 7834
 <211> 955
 <212> PRT
 <213> B.fragilis

<400> 7834
 Phe Met Lys Arg Asn Asn Lys Asn Arg Tyr Leu Tyr Ile Ala Ala Ile
 1 5 10 15
 Phe Ile Ala Ala Met Leu Pro Cys Ile Ala Cys Pro Gln Ser Thr Pro
 20 25 30
 Ile Leu Leu Pro Thr Gly Thr Val Glu Gly Arg Leu Pro Asn Gly Leu
 35 40 45
 His Tyr Leu Ile Leu His Asn Ala Ser Pro Ala Ser Arg Val Glu Phe
 50 55 60
 Arg Leu Ile Met Arg Val Gly Ser Val Gln Glu Thr Glu Gln Glu Lys
 65 70 75 80
 Gly Cys Ala His Phe Leu Glu His Ile Thr Phe Gly Gly Thr Arg His
 85 90 95
 Phe Pro Lys Arg Ser Leu Val Glu Tyr Leu Glu Ser Leu Gly Met Lys
 100 105 110
 Tyr Gly Gln Asp Ile Asn Ala Phe Thr Gly Phe Asp Arg Thr Ile Tyr
 115 120 125
 Met Phe Ala Val Pro Thr Asp Phe Ala Lys Asp Glu Ala Leu Asp Arg
 130 135 140
 Ser Leu Leu Ile Leu His Asp Trp Leu Asp Gly Val Thr Ile Asp Pro
 145 150 155 160

Glu Lys Val Glu Asn Glu Lys Gly Ile Ile Leu Glu Glu Leu Arg Gly
 165 170 175
 Phe Asp Pro Glu Asp Asp Phe Tyr Pro Leu Lys Ile Gly Gln Gly Ile
 180 185 190
 Phe Ser His Arg Met Pro Leu Gly Thr Thr Asp Asp Ile Arg Lys Val
 195 200 205
 Thr Pro Gln Val Leu Lys Asn Tyr Tyr His Lys Trp Tyr Val Pro Ser
 210 215 220
 Leu Ala Thr Leu Val Ile Val Gly Asp Ile Ser Pro Leu Glu Ile Glu
 225 230 235 240
 Ser Lys Ile Lys Glu Arg Phe Lys Ser Leu Pro Gly Arg Pro Val Asn
 245 250 255
 Asp Phe Arg Asn Tyr Pro Leu Glu Tyr Thr Gln Gly Ile His Leu Ala
 260 265 270
 Ser Ile Arg Asp Ser Leu Gln Pro Arg Thr Lys Val Glu Leu Met Ile
 275 280 285
 Pro His Pro Cys Thr Val Glu Arg Thr Met Glu Asp Ala Ile Ala Lys
 290 295 300
 Glu Lys Gly Arg Leu Leu Val Ser Ala Ile Ser Ser Arg Phe Arg Ala
 305 310 315 320
 Arg Lys Leu Lys Thr Asp Val Thr Asp Gln Trp Tyr Leu Ser Asp Lys
 325 330 335
 Asn His Phe Val Leu Thr Val Glu Gly Glu Asn Arg Lys Glu Ile Leu
 340 345 350
 Thr Ser Ile Ser Thr Thr Val Ser Leu Leu Asn Asp Leu Ile Arg Asn
 355 360 365
 Gly Trp Gln Glu Asp Glu Leu Gln Asp Ile Lys Asn Asn Phe Cys Arg
 370 375 380
 Arg Met Lys Leu Ser Thr Asp Ala Pro Ser Arg Pro Ser Ser Met Trp
 385 390 395 400
 Cys Asp Asp Phe Ala Asp Tyr Val Ile Ser Gly Asp Arg Tyr Leu Thr
 405 410 415
 Asp Pro Ser Gln Gln Gln Gln Leu Lys Glu Ala Met Ser Arg Val Ser
 420 425 430
 Gly Gln Ser Leu Gln Thr Leu Leu Lys Glu Trp Met Ser Tyr Arg Glu
 435 440 445
 Glu Thr Leu Leu Val Ala Cys Ser Thr His Pro Gly Leu Gly Ala Pro
 450 455 460
 Leu Ser Glu Thr Glu Ile Ala Ser Ala Trp Ala Gln Gly Glu Gln Val
 465 470 475 480
 Glu Cys Thr Pro Phe Leu Tyr Phe Arg Pro Glu Lys Gln Glu Glu Ile
 485 490 495
 Asp Ile Glu Thr Pro Pro Cys Leu Ala Ala Arg Phe Pro Phe Asp Pro
 500 505 510
 Ala Ser Val Leu Arg Gln Thr Glu Tyr Pro Gln Asn Arg Ile Arg Glu
 515 520 525
 Val Glu Leu Lys Asn Gly Ile Arg Leu Val Leu Lys Pro Thr Leu Glu
 530 535 540
 Ala Asp Ser Thr Leu Leu Ile Thr Ser Phe Ala Pro Phe Gly Thr Ser
 545 550 555 560
 Ser Leu Ser Asp Glu Tyr Pro Leu Leu Glu Gly Phe Ala Gly Tyr
 565 570 575
 Ile Asp Met Gly Asp Ile Ala Lys Val Asp Gly Gln Val Leu Ser Asp
 580 585 590
 Tyr Leu Phe Arg Lys Glu Ile Ser Leu Ser Met Ala Val Glu Asn His
 595 600 605
 Trp His Gly Phe Ile Gly Met Ser Pro Thr Ala Asn Ala Pro Glu Leu
 610 615 620
 Phe Asn Leu Ile Tyr Glu Lys Ile Phe Asp Pro Glu Leu Lys Tyr Asp

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625					630					635				640	
Glu	Phe	Glu	Glu	Ile	Arg	Gln	Asp	Leu	Leu	Glu	Asn	Gln	Asp	Lys	Glu
				645					650					655	
Thr	Ile	Leu	Glu	Lys	Met	Leu	Gln	Arg	Ser	Pro	Asp	Arg	Leu	Leu	Ser
			660					665					670		
Ala	Arg	Ile	Asn	Glu	Leu	Thr	Gly	Thr	Gly	Phe	Ala	Arg	Ser	Ser	Gln
		675					680					685			
Lys	Leu	Ser	Ser	Glu	Gln	Ile	Lys	Asn	Leu	Asn	Leu	Asp	Ser	Ile	Ala
	690					695					700				
Ala	Phe	Tyr	Lys	Lys	Leu	Tyr	Thr	Asn	Pro	Gln	Gly	Thr	Thr	Tyr	Val
705					710					715					720
Ile	Cys	Gly	Asn	Phe	Asn	Ala	Asp	Thr	Leu	Met	Gln	Gln	Phe	Val	Ser
			725						730					735	
Val	Phe	Gly	Arg	Ile	Pro	Val	Ser	Ser	His	Leu	Ser	Arg	Phe	Ser	Tyr
			740				745						750		
Pro	His	Phe	Asn	Phe	Pro	Val	Arg	Lys	His	Ile	Glu	Gly	Phe	Pro	Asn
		755					760					765			
Asp	Asn	Asp	Thr	Gln	Thr	Leu	Phe	Asp	Tyr	Leu	Leu	Pro	Gly	His	Tyr
	770					775					780				
Gln	Pro	Gly	Leu	Lys	Asn	Thr	Leu	Thr	Leu	Lys	Leu	Met	Arg	Asp	Leu
785					790					795					800
Ile	Arg	Asn	Arg	Leu	Ile	Ser	Val	Leu	Arg	Glu	Gln	Lys	Ser	Leu	Val
			805						810					815	
Tyr	Ser	Pro	Tyr	Ile	Ser	Leu	Met	Tyr	Glu	Gly	Ile	Pro	Gln	Gly	Ile
			820					825					830		
Phe	Tyr	Phe	Asp	Ile	Asn	Ala	Ser	Ala	Asp	Asn	Asp	Asn	Met	Pro	Gln
		835					840					845			
Ile	Glu	Gln	Leu	Leu	Lys	Glu	Ile	Leu	His	Gln	Leu	Lys	Gln	Gln	Glu
	850					855					860				
Val	Asp	Asn	Glu	Glu	Leu	Asn	Thr	Leu	Lys	Arg	Ser	Phe	Leu	Ile	Ala
865					870					875					880
Lys	Arg	Glu	Ala	Leu	Asn	Glu	Glu	Ser	Pro	Ser	Ala	Trp	Arg	Ala	Ala
			885						890					895	
Leu	Val	Gly	Leu	Leu	Lys	Asn	Gly	Glu	Thr	Ile	Ser	Asp	Phe	Asp	His
		900						905					910		
Tyr	Glu	Gln	Cys	Leu	Asp	Ser	Ile	Thr	Pro	Ala	Ile	Leu	Arg	Glu	Ala
	915						920						925		
Phe	Arg	Arg	Tyr	Leu	Asp	Thr	Glu	Asn	Tyr	Ile	Leu	Leu	Tyr	Leu	Ser
	930					935					940				
Lys	Asn	Lys	Leu	Lys	Asn	Asp	Thr	Ser	Asn	His					
945					950					955					

<210> 7835

<211> 720

<212> PRT

<213> B.fragilis

<400> 7835

Lys	Met	Lys	Ser	Ile	Ser	Ile	Thr	Thr	Tyr	Arg	Gly	Phe	Ser	Lys	Val
1				5					10					15	
Lys	Gly	Lys	Cys	Ser	Leu	Gln	Glu	Leu	Ile	Gly	Trp	Val	Arg	Ser	Arg
		20						25					30		
Gln	Tyr	Ala	Asn	Leu	Ile	Glu	Lys	Ile	Gly	Arg	Leu	Val	Ser	Glu	Gly
		35					40					45			
Lys	Thr	Lys	Glu	Ala	Glu	Asn	Val	Lys	Arg	Gln	Leu	Asp	Tyr	Phe	Thr
	50					55					60				
Val	Thr	Ala	Asn	Tyr	His	Glu	Cys	Arg	Leu	Ala	His	Ser	Ile	Ala	Ala
65					70					75					80
Tyr	Asn	Asp	Thr	Ser	Thr	Ile	Asp	Ile	Asp	Lys	Leu	Arg	Glu	Glu	Glu

				85					90					95	
Leu	Glu	Arg	Ile	Arg	Ala	Leu	Ile	Glu	Ala	Asp	Glu	Ala	Thr	Leu	Ala
			100					105					110		
Cys	Phe	Leu	Thr	Ala	Lys	Gln	His	Gly	Phe	Lys	Ile	Leu	Ala	Tyr	Leu
		115					120					125			
Thr	Asp	Leu	Glu	Ala	Glu	Ala	Trp	Arg	Asn	Ser	Phe	Phe	Lys	Thr	Ala
	130					135					140				
Thr	Ile	Thr	Tyr	Asp	Arg	Leu	Glu	Gln	Tyr	His	Ala	Gly	Ile	Tyr	Glu
145					150				155					160	
Leu	Thr	Arg	Lys	His	Tyr	Glu	Lys	Leu	Leu	Gln	Thr	Glu	Val	Asp	Thr
			165					170					175		
Ser	Gly	Lys	Asp	Leu	Ser	Arg	Gly	Val	Phe	Ala	Ser	Tyr	Asp	Pro	Lys
		180					185					190			
Ala	Phe	Tyr	Ser	Ala	Glu	Arg	Val	Ala	Arg	Ile	Pro	Glu	Arg	Thr	Leu
	195					200					205				
Thr	Ile	Glu	Ala	Pro	Glu	Pro	Ala	Gln	Arg	Gly	Arg	Lys	Lys	Lys	Lys
	210					215					220				
Glu	Pro	Glu	Thr	Gly	Gln	Thr	Gly	Asp	Ile	Ser	Ala	Tyr	Thr	Cys	Met
225					230				235					240	
Glu	Phe	Asn	Lys	Cys	Leu	Cys	Ser	Thr	Gln	Arg	Leu	Met	Lys	Tyr	Thr
			245					250					255		
Glu	Gly	Ser	Arg	Asn	Ser	Phe	Leu	Phe	Thr	Leu	Gly	Asn	Lys	Cys	Phe
		260					265					270			
Arg	Lys	Gly	Leu	Glu	Glu	Ser	Glu	Val	Lys	Arg	Leu	Ala	Ala	Glu	Arg
		275					280					285			
Leu	Gly	Asp	Gly	Gly	Gly	Met	Asp	Thr	Asp	Thr	Pro	Ile	Gly	Asn	Ala
	290					295					300				
Tyr	Thr	Tyr	Thr	Asp	Arg	Thr	Glu	Arg	Ala	Glu	Glu	Lys	Lys	Lys	Ile
305					310				315					320	
Pro	Leu	Val	Glu	Gln	Val	Ile	Asp	Tyr	Leu	Asn	Lys	Asn	Tyr	Ala	Phe
				325				330					335		
Arg	Arg	Asn	Thr	Val	Leu	Asp	Arg	Leu	Glu	Met	Cys	Asp	Leu	Ser	Gln
			340				345					350			
Thr	Glu	Glu	Lys	Ser	Phe	Tyr	Ala	Met	Arg	Asn	Lys	Asp	Phe	Asn	Ser
	355						360					365			
Ile	Phe	Leu	Asn	Ile	Ser	Arg	Gln	Gly	Ile	Ala	Tyr	Pro	Leu	Asn	Ser
	370				375				380						
Leu	Lys	Ser	Val	Ile	Asp	Ser	Asp	Tyr	Ser	Pro	Glu	Phe	Asn	Pro	Phe
385					390				395					400	
Thr	His	Tyr	Phe	Glu	Gly	Asn	Ala	Arg	Trp	Asp	Arg	Lys	Thr	Asp	His
			405					410					415		
Ile	Arg	Lys	Leu	Ala	Asp	Thr	Ile	Gln	Ala	Glu	Asp	Gln	Glu	Phe	Trp
			420				425					430			
Arg	Glu	Gly	Phe	Arg	Arg	Trp	Ile	Val	Ala	Met	Val	Ala	Ser	Ala	Leu
	435					440					445				
Arg	Pro	Gly	Lys	Ala	Asn	Gln	Glu	Ala	Leu	Val	Leu	His	Gly	Ala	Gln
	450				455				460						
Gly	Lys	Gly	Lys	Ser	Thr	Trp	Ile	Arg	His	Leu	Leu	Pro	Pro	Glu	Leu
465				470				475						480	
Ala	Glu	Tyr	Tyr	Arg	Asn	Gly	Met	Ile	Asp	Pro	Ala	Asn	Lys	Asp	Asp
			485					490					495		
Leu	Leu	Leu	Leu	Ser	Thr	Arg	Leu	Leu	Ile	Asn	Met	Glu	Glu	Phe	Glu
		500					505					510			
Gly	Val	Lys	Thr	Gly	Asp	Ile	Ala	Glu	Leu	Lys	Arg	Ile	Ile	Gly	Gln
	515					520						525			
Glu	Asn	Val	Thr	Ile	Arg	Lys	Val	Tyr	Asp	Thr	Gln	Ala	Gln	Leu	Tyr
	530				535				540						
Pro	Arg	Arg	Ala	Ser	Phe	Ile	Gly	Ser	Thr	Asn	Asn	Met	Gln	Phe	Leu
545					550				555					560	

100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560

Lys Asp Tyr Gly Gly Asn Arg Arg Phe Leu Val Ile Pro Val Lys Thr
 565 570 575
 Ile Asp Tyr Arg Thr Pro Val Asp His Lys Gly Val Tyr Ala Gln Ala
 580 585 590
 Val Gln Leu Ile Glu Asp Gly Phe Arg Tyr Trp Phe Glu Gly Asn Glu
 595 600 605
 Ile Asp Asp Ile Asn Thr Arg Asn Glu Arg His Arg Met Lys Asp Pro
 610 615 620
 Leu Glu Glu Asn Leu Tyr Val Tyr Phe Arg Pro Ala Gly Glu Lys Asp
 625 630 635 640
 Phe Glu Val Lys Trp Lys Pro Ala Ala Ala Ile Leu Ala Thr Leu Ser
 645 650 655
 Val Tyr Gly Arg Thr Gln Ala Asn Ala Gln Thr Gln Gln Val Leu Val
 660 665 670
 Gln Ile Leu Glu Arg Asp Ala Phe Gly Lys Arg Val Asn Ile His Gly
 675 680 685
 Ile Thr Glu Tyr Ala Val Val Glu Leu Thr Gln Gln Glu Val Ser Glu
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 Asn Phe Arg Lys Arg Asp Lys Gly Lys Glu Met Asp Glu Leu Pro Phe
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<210> 7836

<211> 921

<212> PRT

<213> B.fragilis

<400> 7836

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 Thr Gly Lys Val Gly Ala Gln Glu Ala Ala Ser Ala Ser Lys Arg Ala
 20 25 30
 Asn Gln Gln Tyr Val Leu Phe Glu Ser Glu Arg Asp Lys Gly Thr Asn
 35 40 45
 Val Thr Ala Met Tyr Asp Tyr Leu Met Asp Ser Tyr Glu Asn Phe Met
 50 55 60
 Lys Val Val Glu Ala Pro Asp Asn Ser Gln Tyr Ile Gly Gly Ala Lys
 65 70 75 80
 Asn Arg Leu Arg Ala Leu Tyr Pro Tyr Leu Leu Asn Gly Ala Val Tyr
 85 90 95
 Tyr Ser Glu Gln Lys Gln Pro Ser Lys Ala Leu Asp Phe Ala Ala Ala
 100 105 110
 Tyr Ile Asp Met Pro Gln Leu Lys Leu Phe Arg Ser Glu Leu Leu Pro
 115 120 125
 Lys Asp Asn Arg Tyr Ala Ser Val Val Tyr Tyr Ala Ala Val Ala Ala
 130 135 140
 Phe Asn Leu Glu Lys Asn Glu Lys Ala Leu Arg Tyr Phe Gln Glu Tyr
 145 150 155 160
 Leu Asn Thr Gly Thr Glu Ala Gln Gln Lys Asp Cys Tyr Val Tyr Met
 165 170 175
 Asn Met Ile Tyr Gln Lys Gln Lys Lys Tyr Ala Asp Gln Glu Arg Val
 180 185 190
 Leu Glu Gln Ala Ile Ala Lys Tyr Pro Val Ser Leu Asp Phe Leu Tyr
 195 200 205
 Asn Leu Val Asn Val His Ile Ala Thr Asn Asn Met Glu Lys Leu Ile
 210 215 220
 Gly Ala Ile Asp Arg Ile Leu Ala Val Asp Pro Asn Asn Asp Lys Val
 225 230 235 240
 Leu Pro Ile Lys Ala Arg Ile Leu Glu Arg Gln Gly Lys Asn Val Glu
 245 250 255

Ala Leu Asp Ile Tyr Lys Arg Leu Tyr Ala Leu His Pro Glu Ser Phe
 260 265 270
 Glu Leu Met Thr Gly Val Ala Arg Ala Asn Phe Asn Cys Ala Thr Glu
 275 280 285
 Ile Val Asn Asn Gly Ala Thr Ile Ala Asn Asp Thr Glu Tyr Ala Leu
 290 295 300
 Val Arg Gln Arg Ala Ser Gly Tyr Leu Met Asp Ala Lys Asp Leu Phe
 305 310 315 320
 Leu Lys Ile Leu Gln Lys Asp Pro Ser Ser Lys Met Tyr Met Gln Gly
 325 330 335
 Leu Ala Gly Val Tyr Gln Tyr Met Asp Met Lys Pro Glu Tyr Glu Val
 340 345 350
 Leu Asn Lys Ile Val Gln Asp Gly Ala Ser Tyr Thr Ala Phe Pro Ser
 355 360 365
 Arg Leu Ala Ala Tyr Lys Glu Ala Leu Lys Lys Thr Glu Asn Val Ala
 370 375 380
 Gln Glu Gln Gln Ala Val Pro Val Pro Ile Glu Pro Ala Met Leu Val
 385 390 395 400
 Ile Lys Val Asp Gln Phe Thr Asp Ala Asn Asn Asn Lys Val Ile Asp
 405 410 415
 Ala Gly Glu Ser Phe Ala Ile Arg Phe Thr Ile Glu Asn Gln Gly Lys
 420 425 430
 Gly Asp Ala Tyr Asn Val Arg Leu Arg Leu Ala Glu Gln Gly Tyr
 435 440 445
 Asp Gln Tyr Phe Asp Gly Pro Arg Glu Leu Asp Gly Gly Asn Ile Ala
 450 455 460
 Ala Gly Lys Ser Lys Glu Tyr Thr Phe Arg Tyr Ile Ala Lys Lys Glu
 465 470 475 480
 Leu Pro Thr Ser Leu Ala Lys Ile Asn Ile Tyr Ala Phe Glu Ala Asn
 485 490 495
 Gly Phe Asp Ala Asp Pro Ser Glu Leu Ile Val Asn Thr Gln Glu Tyr
 500 505 510
 Ala Met Pro Arg Leu Arg Val Ala Asp His Gln Phe Phe Ala Ser Glu
 515 520 525
 Gly Ser Ser Ile Thr Leu Gly Lys Asn Gly Lys Leu Thr Val Ala Leu
 530 535 540
 Gln Asn Phe Gly Thr Gln Thr Ala Arg Lys Val Lys Val Asn Phe Thr
 545 550 555 560
 Leu Pro Lys Asn Val Tyr Thr Thr Asp Thr Pro Glu Ile Ile Val Asp
 565 570 575
 Ser Ile Ala Pro Gly Asp Val Ala Ile Leu Asp Tyr Gly Phe Leu Val
 580 585 590
 Asn Lys Arg Phe Asp Gly Asp Ser Ile Ala Val Met Leu Ala Val Thr
 595 600 605
 Glu Ser Thr Arg Ser Ala Ser Leu Asn Glu Ala Tyr Lys Val Lys Val
 610 615 620
 Gly Glu Tyr Leu Ser Ala Ser Ala Ser Met Asn Leu Ser Gly Asn Val
 625 630 635 640
 Ala Ala Arg Lys Val Asn Val Lys Asp Phe Ser Leu Gly Phe Lys Ser
 645 650 655
 Glu Leu Met Glu Asp Val Pro Val Gly Ala Val Asn Arg His Arg Tyr
 660 665 670
 Ala Leu Ile Gly Asn Glu Asp Tyr Ser Met Thr Gly Ala Asn Ala
 675 680 685
 Glu Ile Asn Val Pro Tyr Ala Val Asn Asp Ala Val Leu Phe Arg Glu
 690 695 700
 Tyr Cys Val Arg Thr Phe Gly Val Pro Asp Gly Gln Ile Lys Val Val
 705 710 715 720
 Pro Asn Ala Thr Ala Gly Met Met His Glu Gln Leu Asp Trp Leu Val

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[illegible]

<400> 7837

Leu	Tyr	Leu	Gly	Lys	Pro	Tyr	Val	Gln	Met	Glu	Asn	Lys	Tyr	Gln	Tyr
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Phe	Lys	Arg	Asp	Ile	Ser	Trp	Leu	Ser	Phe	Asn	Tyr	Arg	Val	Leu	Leu
			20					25					30		
Glu	Ala	Asp	Asp	Asp	Arg	Leu	Pro	Leu	Tyr	Glu	Arg	Ile	Asn	Phe	Ile
		35					40					45			
Ser	Ile	Tyr	Ser	Ser	Asn	Leu	Glu	Glu	Phe	Tyr	Lys	Ile	Arg	Val	Ala
	50					55					60				
Asp	His	Lys	Ala	Val	Ala	Ser	Gly	Val	Thr	Asp	Gly	Thr	Glu	Glu	Ser
65					70					75					80
Leu	Gln	Ser	Ala	Lys	Asp	Leu	Leu	Glu	Glu	Ile	Asn	Arg	Glu	Val	Asn
				85					90					95	
Arg	Gln	Leu	Glu	Asp	Arg	Ile	His	Ile	Tyr	Glu	Lys	Lys	Ile	Ile	Pro
			100					105					110		
Ala	Leu	Arg	Lys	Asn	His	Val	Val	Phe	Tyr	Gln	Ser	Arg	Asn	Val	Glu
		115					120					125			
Pro	Phe	His	Gln	Gln	Phe	Val	Lys	Asp	Phe	Phe	Arg	Glu	Glu	Ile	Phe
	130					135					140				
Pro	Tyr	Leu	Gln	Pro	Val	Pro	Val	Ser	Lys	Asp	Lys	Val	Ile	Ser	Phe
145					150					155					160
Leu	Arg	Asp	Asn	Arg	Leu	Tyr	Leu	Ala	Val	Arg	Leu	Phe	Leu	Lys	Gly
			165						170					175	
Thr	Asn	Lys	Glu	Asp	Ala	Asp	His	Leu	Gln	Tyr	Phe	Val	Met	Lys	Leu
			180					185					190		
Pro	Tyr	Ser	Lys	Val	Pro	Arg	Phe	Ile	Glu	Leu	Pro	Lys	His	Gly	Arg
		195					200					205			
Glu	Tyr	Tyr	Leu	Met	Phe	Ile	Glu	Asp	Ile	Ile	Lys	Ala	Asn	Ile	Asp

[illegible]

Tyr Asn Tyr Leu Lys Glu Lys Asn Glu Thr Phe Leu
 690 695 700

<210> 7838
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 7838

Asn	Lys	His	Tyr	Trp	Thr	Ser	Thr	Leu	Tyr	Ile	Val	Glu	Phe	Tyr	Asn
1				5					10					15	
Leu	Arg	Gly	Gly	Lys	Glu	Arg	Ile	Phe	Asp	Asp	Met	Asn	Asn	Gly	Phe
		20						25					30		
Gly	Trp	Ser	Arg	Leu	Pro	Lys	Ser	Phe	Met	Ala	Glu	Asn	Thr	Val	Phe
		35					40					45			
Leu	Leu	Leu	Thr	Ala	Leu	Ile	His	Asn	Phe	Tyr	Lys	Thr	Ile	Met	Ser
	50					55					60				
Arg	Leu	Asp	Thr	Lys	Ala	Phe	Gly	Leu	Lys	Lys	Thr	Ser	Arg	Ile	Lys
65					70					75					80
Ala	Phe	Val	Phe	Arg	Phe	Ile	Ser	Val	Pro	Ala	Lys	Trp	Ile	Met	Thr
			85						90					95	
Ala	Arg	Gln	Tyr	Val	Leu	Asn	Ile	Tyr	Thr	Glu	Asn	Arg	Ala	Tyr	Ala
			100					105					110		
Lys	Pro	Phe	Lys	Thr	Glu	Phe	Gly								
		115					120								

<210> 7839
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 <212> PRT
 <213> B.fragilis

<400> 7839

Leu	Pro	Val	Ile	Ile	Pro	Asp	Ile	Leu	Asn	Ser	Cys	Pro	Phe	Arg	Asp
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Gly	Ala	Ala	Asp	Arg	His	Lys	Leu	Asn	Ser	Gln	Asn	Lys	Thr	Gln	Met
		20						25					30		
Ile	Arg	Thr	Met	Ile	Ala	Ser	Cys	Leu	Leu	Ala	Cys	Ser	Gly	Phe	Val
		35					40					45			
Ser	Ala	Gln	Met	Thr	Gly	Gly	Asn	Pro	Glu	Glu	Val	Lys	Gln	Thr	Ala
	50					55					60				
Pro	Ala	Pro	Leu	Tyr	Arg	Asp	Pro	Val	Tyr	Asp	Gly	Val	Ala	Asp	Pro
65					70					75					80
Val	Val	Val	Trp	Asn	Lys	Glu	Asp	Arg	Ser	Trp	Trp	Met	Leu	Tyr	Thr
				85					90					95	
Gln	Arg	Arg	Ala	Asn	Val	Asn	Ala	Gly	Asn	Val	Ala	Tyr	Cys	Tyr	Gly
			100					105					110		
Asn	Asp	Ile	Gly	Ile	Ala	Ser	Ser	Arg	Asp	His	Gly	Arg	Thr	Trp	Val
	115						120					125			
Tyr	Arg	Gly	Val	Leu	Asp	Leu	Asn	Met	Glu	Arg	Gly	Lys	Asn	Thr	Phe
	130					135					140				
Trp	Ala	Pro	Glu	Val	Val	Asn	Phe	Asn	Gly	Val	Tyr	His	Leu	Phe	Val
145					150					155					160
Ser	Tyr	Ile	Glu	Gly	Val	Arg	Thr	Asp	Trp	Gly	Gly	His	Ala	Arg	Met
			165						170					175	
Ala	His	Tyr	Thr	Ser	Lys	Asn	Met	Trp	Asp	Trp	Lys	Phe	Glu	Gly	Phe
			180					185					190		
Val	Lys	Leu	Ser	Ser	Asp	Lys	Thr	Ile	Asp	Ala	Thr	Phe	Phe	Arg	Met
		195					200					205			
Pro	Asp	Gly	Lys	Trp	Arg	Ala	Trp	Tyr	Lys	Asp	Glu	Thr	Arg	Asn	Ala

210	215	220
Ala Ile Met Thr	Ala Glu Ser Asp Asp Leu Phe His Trp Thr Leu Asn	
225	230	235
Asp Thr Pro Val	Ile Asp Gln Ser Arg Gln Glu Gly Pro Lys Val Phe	240
	245	250
Arg Phe Gly Gly	Tyr Tyr Trp Met Leu Thr Asp Glu Trp His Gly Met	255
	260	265
Arg Val Tyr Arg	Ser Lys Asp Ala Thr Thr Trp Glu Lys Gln Gly Val	270
	275	280
Ile Leu Asp Lys	Pro Gly Thr Arg Pro Glu Asp Thr Pro Ser Gly Ala	285
	290	295
His Gly Asp Val	Val Val Val Gly Asp Lys Ala Tyr Val Ile Tyr Phe	300
305	310	315
Thr His Pro Gly	Arg Lys Ala His Ser Glu Glu Thr Lys Asp Glu Asp	320
	325	330
Gly Asn Ile Pro	Tyr His Leu Arg Arg Ser Ser Ala Gln Val Ala Glu	335
	340	345
Leu Leu Ile Lys	Asp Gly Gln Leu Val Ala Asp Arg Ser Pro Glu Phe	350
	355	360
Asn Phe Tyr Leu	Pro Asp Met Glu Glu	365
370	375	

<210> 7840

<211> 400

<212> PRT

<213> B.fragilis

<400> 7840

Met Lys Thr Ile	Met Lys Lys Leu Phe Ile Tyr Ala Val Gly Ile Cys
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Leu Leu Pro Ala	Phe Thr Ser Cys Lys Asp Asp Arg Glu Glu Asn Lys
	20
Tyr Thr Gly Ile	Asn Lys Ile Tyr Leu Ser Ala Glu Thr Pro Val Ile
	35
Thr Glu Ser Glu	Asn Ile Pro Leu Thr Val Asn Val Asp Leu Thr Leu
	50
Thr Cys Glu Gln	Asp Leu Val Leu Asn Phe Glu Leu Pro Asp Asp Lys
65	70
Asn Gly Val Leu	Lys Leu Glu Asn Asn Pro Val Thr Ile Lys Ala Gly
	85
Lys Arg Ser Ala	Thr Phe Glu Val Val Ser Asn Gln Lys Asn Leu Leu
	100
Thr Glu Asp Thr	Tyr Phe Gln Val Gly Ile Ser Gln Phe Pro Thr Asp
	115
Asn Leu Met Leu	Asn Glu Thr Leu Gln Val Arg Val Lys Pro Asn Pro
	130
Lys Ile Pro Glu	Leu Ser Pro Gln Gln Lys Ala Leu Ile Lys Gly Tyr
145	150
Lys Thr Lys Tyr	Gly Ile Asp Leu Asn Lys Trp Leu Gly Val Leu Ser
	165
Cys His Thr Thr	Val Gln Ser Pro Ala Asp Gly Tyr Leu Gln Pro Phe
	180
Ala Ala Ala Phe	Thr Lys Glu Tyr Asp Gly Lys Thr Val Ile Thr Leu
	195
Ser Glu Gln Ala	Thr Glu Asp Met Pro Val Leu Lys Met Thr Asp Asn
	210
Pro Phe Gly Leu	Thr Glu Tyr Leu Tyr Phe Val Leu Arg Ser Glu Thr
225	230
Val Ala Asp Pro	Glu Phe Trp Thr Gln Gln Pro Glu Pro Gln Lys Leu
	235
	240

				245					250					255			
Met	Lys	Leu	Leu	Asn	Trp	Asn	Lys	Glu	Ser	Lys	Glu	Thr	Phe	Ala	Val		
			260					265					270				
Ser	Leu	Asp	Ala	Ile	Arg	Leu	Lys	Asp	Ile	Thr	Ser	Thr	Ser	Thr	Arg		
		275					280					285					
Leu	Glu	Tyr	Leu	Gly	Pro	Gly	Lys	Asn	Tyr	Tyr	Gly	Asp	Pro	Ile	Thr		
	290					295					300						
Ile	Val	Pro	Phe	Thr	Tyr	Gln	Phe	Ser	Ala	Leu	Asp	Arg	Gln	Asn	Lys		
305					310					315					320		
Leu	Leu	Glu	Ser	Gly	Asn	Ala	Glu	Ile	Lys	Glu	Ile	Asn	Asp	Gln	Gly		
				325					330					335			
Ala	Ser	Ala	Asp	Pro	Ala	Tyr	Tyr	Leu	Asn	Cys	Tyr	Asp	Leu	Val	Asn		
			340					345					350				
Ser	Asp	Asn	Tyr	Asp	Thr	Pro	Glu	Asn	Phe	Ile	Lys	Ser	Thr	Gly	Asn		
		355				360					365						
Ile	Asp	Phe	Ala	Thr	Asp	Lys	Met	Thr	Tyr	Gln	Phe	Leu	Leu	Ser	His		
	370					375					380						
Val	Asn	Ala	Gly	Gly	Tyr	Thr	Arg	Ile	Thr	Val	Val	Tyr	Glu	Lys	Lys		
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<210> 7841

<211> 417

<212> PRT

<213> B.fragilis

<400> 7841

Arg	Ile	Tyr	Ile	Ile	Met	Lys	Lys	Leu	Ile	Phe	Met	Gly	Ile	Leu	Gly		
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Leu	Phe	Ile	Leu	Gly	Ser	Cys	Asn	Ser	Lys	Ser	Gly	Gly	Asn	His	Glu		
			20				25						30				
Gly	His	Asp	His	Gly	Thr	Glu	Ala	His	Asp	His	Glu	His	Glu	Gly	His		
		35				40						45					
Asp	His	Glu	His	Glu	Gly	Glu	Asp	His	Glu	Gly	His	Asp	His	Glu	Gly		
	50				55				60								
Asp	Glu	His	Ser	Arg	Ser	Ser	Glu	Pro	Ala	Thr	Gly	His	Ser	Asp	Glu		
65				70					75					80			
Ile	Ile	Leu	Pro	Lys	Ala	Lys	Ala	Glu	Ala	Ala	Gly	Val	Lys	Thr	Ser		
			85					90						95			
Ile	Ile	Glu	Pro	Glu	Val	Phe	Glu	Gln	Val	Ile	Lys	Thr	Ser	Gly	Gln		
		100					105						110				
Val	Leu	Ala	Ala	Gln	Gly	Asp	Glu	Ser	Val	Ala	Val	Ala	Thr	Val	Ala		
	115					120						125					
Gly	Val	Val	Ser	Phe	Arg	Gly	Lys	Val	Thr	Glu	Gly	Met	Ser	Val	Gly		
	130					135					140						
Lys	Gly	Thr	Ala	Leu	Val	Thr	Ile	Ser	Ser	Ser	Asn	Ile	Ala	Asp	Gly		
145				150					155					160			
Asp	Pro	Val	Gln	Arg	Ala	Arg	Ile	Ala	Tyr	Asp	Ile	Ser	Arg	Lys	Glu		
			165					170					175				
Tyr	Glu	Arg	Met	Gln	Ala	Leu	Val	Lys	Asn	Lys	Ile	Val	Ser	Asp	Lys		
		180						185					190				
Glu	Phe	Ala	Gln	Ala	Glu	Gln	Asn	Tyr	Glu	Asn	Ala	Arg	Ile	Ser	Tyr		
	195					200					205						
Glu	Ala	Leu	Ala	Lys	Asn	His	Ser	Ala	Gly	Gly	Gln	Ala	Val	Thr	Ser		
	210				215						220						
Pro	Ile	Ser	Gly	Phe	Val	Lys	Asn	Ile	Leu	Val	Lys	Glu	Gly	Asp	Tyr		
225				230					235					240			
Val	Thr	Ile	Gly	Gln	Pro	Leu	Val	Ser	Ile	Thr	Gln	Asn	Arg	Arg	Leu		
			245						250				255				
Phe	Leu	Arg	Ala	Glu	Val	Ser	Glu	Lys	Tyr	Tyr	Pro	Ser	Leu	Arg	Thr		

	260		265		270
Ile Gly Ser Ala Asn Phe Lys Thr Pro Tyr Asp Asn Lys Val Tyr Glu					
275		280		285	
Leu Lys Glu Leu Asn Gly Arg Leu Leu Ser Phe Gly Lys Ser Ala Gly					
290		295		300	
Glu Asn Ser Phe Tyr Val Pro Val Thr Phe Glu Phe Asp Asn Lys Gly					
305		310		315	320
Asp Ile Ile Pro Gly Ser Phe Val Glu Val Tyr Leu Leu Ser Ser Pro					
	325		330		335
Met Glu Asn Val Leu Ser Leu Pro Arg Thr Ala Leu Thr Glu Glu Gln					
	340		345		350
Gly Leu Phe Phe Ala Tyr Leu Gln Leu Asp Glu Glu Gly Tyr Lys Lys					
	355		360		365
Gln Glu Val Thr Leu Gly Ala Asp Asn Gly Lys Ser Val Gln Val Leu					
	370		375		380
Ser Gly Ile Lys Ala Gly Asp Arg Val Val Thr Gln Gly Ala Tyr Gln					
385		390		395	400
Val Lys Leu Ala Ser Ala Ser Asn Ala Ile Pro Ala His Ser His Glu					
	405		410		415
His					

<210> 7842

<211> 1019

<212> PRT

<213> B.fragilis

<400> 7842

Asn Ala Asn Met Lys Ala Val Ile Ile Ser Phe Phe Ile Thr Leu Ser					
1	5		10		15
Thr Leu Thr Ser His Ala Gln Gln Arg Asp Ile Val Leu Thr Gly Thr					
	20		25		30
Val Thr Asp His Gln Asn Glu Pro Leu Pro Gly Ala Thr Ile Arg Ile					
	35		40		45
Lys Gly Thr Gln Phe Gly Thr Val Thr Asp Thr Asp Gly His Tyr Leu					
50		55		60	
Leu Arg Gly Lys Trp Lys Glu Asn Asp Leu Ile Leu Phe Ser Phe Ile					
65		70		75	80
Gly Met Lys Glu Ile Arg Val Lys Tyr Thr Gly Gln Lys Val Gln Asp					
	85		90		95
Ala Ala Met Gln Glu Asp Pro Lys Ala Leu Asp Glu Val Ile Ile Val					
	100		105		110
Ala Arg Gln Asn Ile Asn Glu Leu Asp Ile Arg Ala Lys Ser Gly Val					
	115		120		125
Val Gln Arg Val Asp Val Glu Arg Leu Asn Ser Lys Pro Met Ile Asp					
	130		135		140
Met Ser Leu Ala Leu Gln Gly Thr Val Pro Gly Leu Ile Ile Thr Asn					
145		150		155	160
Thr Gly Asp Leu Gly Ser Lys Pro Glu Ile Arg Ile Arg Gly Asn Ser					
	165		170		175
Ser Phe Arg Lys Gly Asp Met Ala Asn Glu Pro Leu Tyr Val Met Asp					
	180		185		190
Gly Lys Val Ile Ser Ser Asp Ala Phe Met Thr Leu Asn Pro Ala Asp					
	195		200		205
Ile Gln Glu Ile Lys Val Leu Lys Asp Ala Val Ala Cys Ala Leu Tyr					
	210		215		220
Gly Ile Lys Ala Ala Asn Gly Val Ile Glu Ile Thr Ser Gln Arg Gly					
225		230		235	240
Asn Pro Asp Gly Arg Leu Thr Thr Ser Tyr Ser Phe Asn Ile Gly Ile					

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$\frac{d^2x}{dt^2} = -\frac{g}{L} x$

Leu Asn Leu Tyr Arg Arg Glu Thr Ser Asp Ala Leu Leu Asp Val Pro
 725 730 735
 Ile Pro Leu Ser Asn Gly Phe Asn Thr Met Lys Arg Asn Ile Gly Val
 740 745 750
 Leu Arg Asn Glu Gly Tyr Glu Leu Thr Ala Ala Leu Lys Val Leu Asp
 755 760 765
 Thr Pro Asp Trp Arg Val Ser Leu Arg Gly Ser Leu Ala Tyr Asn Arg
 770 775 780
 Asn Lys Val Ile Ser Leu Tyr Tyr Thr Asp Arg Leu Tyr Thr Ser Glu
 785 790 795 800
 Thr Ala Leu Thr Pro Asp Tyr Glu Val Gly Lys Ala Tyr Asn Met Leu
 805 810 815
 Tyr Gly Leu Lys Ser Leu Gly Ile Asn Pro Ile Thr Gly Leu Pro Val
 820 825 830
 Phe Gln Gly Ala Asp Gly Ser Glu Ile Pro Pro Thr Gln Asn Pro Ala
 835 840 845
 Arg Glu Asn Phe Ile Val Leu Gly His Ser Thr Pro Pro Tyr Ser Gly
 850 855 860
 Thr Phe Asn Leu Asn Phe Ser Tyr Arg Asn Phe Asp Leu Asp Met Asp
 865 870 875 880
 Phe Tyr Tyr Val Phe Gly Gly Ile Lys Pro Tyr Asn Tyr Ser Tyr Val
 885 890 895
 Arg Ser Ala Asp Ser Ala Asn Lys Asn Ala Ile Gln Lys Gln Leu Glu
 900 905 910
 Asn Met Trp Phe His Arg Gly Asp Glu Gly Lys Ile Tyr His Ser Pro
 915 920 925
 Phe Tyr Ile Ser Pro Ala Asn Ala Ser Leu Gln Gln Pro Asn Thr Glu
 930 935 940
 Thr Val Gly Lys Ser Asp Tyr Leu Lys Leu Ala Met Leu Ser Leu Arg
 945 950 955 960
 Tyr Arg Val Pro His Thr Phe Leu Glu Lys Asn Cys His Phe Ile Lys
 965 970 975
 Tyr Ala Asn Ile Ala Phe Gln Ala Ser Asn Leu Phe Met Ile Thr Pro
 980 985 990
 Tyr Lys Glu Ser Asp Pro Glu Thr Gly Ser Leu Ala Gly Ala Met Gln
 995 1000 1005
 Pro Val Leu Thr Ile Asn Leu Ser Leu Thr Phe
 1010 1015

<210> 7843

<211> 166

<212> PRT

<213> B.fragilis

<400> 7843

Ile Val Asn Ile Ser Met Asn Ser Leu Asp Ser Gln Ile Thr Ala Leu
 1 5 10 15
 Tyr Thr Leu Ala His Glu Leu Leu Tyr Leu Gly Ser Asp Gly Ser Pro
 20 25 30
 Ile Tyr Ser Asp His Phe Ser Arg Leu Asn Gly Asp Val Leu Ser Arg
 35 40 45
 Ala Asn Thr Leu Tyr Pro His His Gly Ser Thr Asp Glu Glu Glu Ala
 50 55 60
 Arg Leu Cys Leu Ser Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asn
 65 70 75 80
 Asn Gly Asp Lys Glu Val Arg Ile Gln Gln Ile Leu Asn Arg Cys Trp
 85 90 95
 Glu Val Leu Asp Arg Leu Pro Ala Ser Leu Leu Lys Val Arg Leu Leu
 100 105 110

Thr Tyr Cys Tyr Gly Glu Val Phe Asp Asp Asp Leu Ser Arg Glu Ala
 115 120 125
 His Ser Ile Ile Asp Ser Trp Gly Glu Arg Ala Leu Ser Gly Asp Glu
 130 135 140
 Cys Glu Ile Ala Glu Gln Leu Arg Ser Leu Glu Glu Asn Pro Tyr Pro
 145 150 155 160
 Asn Trp Glu Val Glu Glu
 165

<210> 7844
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 7844
 Lys Lys Asn Ile Met Lys Leu Lys Glu Ile Ser Lys Asp Ile Tyr Asp
 1 5 10 15
 Val Asp Ala Trp Leu Asp Glu Glu Leu Gly Lys Glu Gly Thr Pro Glu
 20 25 30
 Arg Glu Ala Ser Ile Glu Lys Ala Trp Glu Glu Tyr Asn Gly Gln Ile
 35 40 45
 Leu Leu Asp Ala Arg Lys Asn Ala Arg Leu Thr Gln Glu Glu Leu Ala
 50 55 60
 Asn Arg Ile Gly Ala Asp Lys Ser Tyr Ile Ser Lys Ile Glu Arg Gly
 65 70 75 80
 Leu Ile Thr Pro Thr Val Ser Thr Leu Tyr Arg Ile Ala Ala Ala Met
 85 90 95
 Gly Leu Ser Val Glu Leu Arg Pro Leu
 100 105

<210> 7845
 <211> 179
 <212> PRT
 <213> B.fragilis

<400> 7845
 Asn Thr Asp Met Asn Ile Phe Gly Thr Tyr Ala Tyr Ala Tyr Phe Lys
 1 5 10 15
 Tyr Leu Leu Leu Lys Asp Met Asp Val Leu Ile Ser Phe Phe Arg Lys
 20 25 30
 Lys Gly Ile Cys Ile Gly Glu Asn Cys Phe Ile Tyr Ser Ala Ile Cys
 35 40 45
 Thr Pro Glu Pro Tyr Leu Ile Ile Ile Lys Asn Asn Val Thr Ile Ser
 50 55 60
 Val Gly Val Gln Leu Ile Thr His Asp Asn Ser Val Cys Lys Val Leu
 65 70 75 80
 Pro Asn Arg Thr Asp Ala Phe Gly Arg Ile Val Ile Gly Asn Asn Ser
 85 90 95
 Phe Ile Gly Ala Gly Ser Ile Ile Leu Pro Gly Val Thr Ile Gly Asp
 100 105 110
 Asn Cys Ile Val Ala Ala Gly Ser Ile Val Thr Lys Ser Leu Gly Asp
 115 120 125
 Asn Val Val Ile Gly Gly Asn Pro Ala Lys Ile Ile Ser Thr Ile Asp
 130 135 140
 Glu Tyr Lys Asp Lys Ile Ser Asp Lys Ser Phe Asn Val Asn Gly Met
 145 150 155 160
 Thr Phe Val Gln Lys Arg Asn His Ile Leu Ser Ser Leu Asp Lys Leu
 165 170 175
 Ile Gln Lys

<210> 7846
 <211> 547
 <212> PRT
 <213> B.fragilis

<400> 7846

Arg	Ser	Asp	Met	Ile	Ser	Val	Asp	Gly	Leu	Ala	Val	Glu	Phe	Gly	Gly
1				5					10					15	
Thr	Thr	Leu	Phe	Ser	Asp	Ile	Ser	Phe	Val	Ile	Asn	Glu	Lys	Asp	Arg
		20						25					30		
Ile	Ala	Leu	Met	Gly	Lys	Asn	Gly	Ala	Gly	Lys	Ser	Thr	Leu	Leu	Lys
	35					40					45				
Ile	Leu	Ala	Gly	Val	Arg	Gln	Pro	Thr	Arg	Gly	Arg	Ile	Ser	Ala	Pro
	50					55					60				
Lys	Glu	Cys	Val	Ile	Ala	Tyr	Leu	Pro	Gln	His	Leu	Met	Thr	Glu	Asp
65					70					75				80	
Gly	Arg	Thr	Val	Phe	Glu	Glu	Thr	Ala	Gln	Ala	Phe	Ala	His	Leu	His
				85					90					95	
Glu	Met	Glu	Ala	Glu	Ile	Glu	Arg	Met	Asn	Lys	Glu	Leu	Glu	Thr	Arg
			100					105					110		
Thr	Asp	Tyr	Glu	Ser	Asp	Ser	Tyr	Met	Glu	Leu	Ile	Glu	Asn	Val	Ser
	115						120					125			
Thr	Leu	Ser	Glu	Lys	Phe	Tyr	Ala	Ile	Asp	Ala	Thr	Asn	Tyr	Glu	Glu
	130					135					140				
Asp	Val	Glu	Lys	Ala	Leu	Leu	Gly	Leu	Gly	Phe	Met	Arg	Glu	Asp	Phe
145					150					155				160	
His	Arg	Gln	Thr	Ser	Asp	Phe	Ser	Gly	Gly	Trp	Arg	Met	Arg	Ile	Glu
				165					170					175	
Leu	Ala	Lys	Leu	Leu	Leu	Gln	Lys	Pro	Asp	Val	Leu	Leu	Leu	Asp	Glu
			180					185					190		
Pro	Thr	Asn	His	Leu	Asp	Ile	Glu	Ser	Ile	Gln	Trp	Leu	Glu	Asp	Phe
	195						200					205			
Leu	Ile	Asn	Asn	Gly	Lys	Ala	Val	Ile	Val	Ile	Ser	His	Asp	Arg	Lys
	210					215					220				
Phe	Val	Asp	Asn	Ile	Thr	Thr	Arg	Thr	Ile	Glu	Val	Thr	Met	Gly	Arg
225					230					235				240	
Ile	Tyr	Asp	Tyr	Lys	Val	Asn	Tyr	Ser	Lys	Tyr	Leu	Glu	Leu	Arg	Lys
				245					250					255	
Glu	Arg	Arg	Glu	Gln	Gln	Gln	Lys	Ala	Tyr	Glu	Glu	Gln	Gln	Lys	Phe
			260					265					270		
Ile	Ala	Glu	Thr	Lys	Asp	Phe	Ile	Glu	Arg	Phe	Lys	Gly	Thr	Tyr	Ser
	275						280					285			
Lys	Thr	Leu	Gln	Val	Gln	Ser	Arg	Val	Lys	Met	Leu	Glu	Lys	Leu	Glu
	290					295					300				
Ile	Leu	Glu	Val	Asp	Glu	Glu	Asp	Thr	Ser	Ala	Leu	Arg	Leu	Lys	Phe
305					310					315				320	
Pro	Pro	Ser	Pro	Arg	Ser	Gly	Asn	Tyr	Pro	Val	Ile	Met	Asp	Gly	Val
				325					330					335	
Gly	Lys	Ser	Tyr	Gly	Asp	Lys	Val	Val	Phe	Arg	Asn	Ala	Thr	Leu	Thr
			340					345					350		
Val	Glu	Arg	Gly	Asp	Lys	Val	Ala	Phe	Val	Gly	Lys	Asn	Gly	Glu	Gly
	355					360						365			
Lys	Ser	Thr	Leu	Val	Lys	Cys	Ile	Met	Asn	Glu	Ile	Glu	His	Asp	Gly
	370					375					380				
Thr	Leu	Thr	Leu	Gly	His	Asn	Val	Gln	Ile	Gly	Tyr	Phe	Ala	Gln	Asn
385					390					395				400	
Gln	Ala	Ser	Leu	Leu	Asp	Glu	Asn	Leu	Thr	Val	Phe	Gln	Thr	Ile	Asp

405 410 415
 Asp Val Ala Lys Gly Glu Ile Arg Asn Lys Ile Arg Asp Leu Leu Gly
 420 425 430
 Ala Phe Met Phe Gly Gly Pro Glu Glu Ser Met Lys Lys Val Lys Val
 435 440 445
 Leu Ser Gly Gly Glu Arg Thr Arg Leu Ala Met Ile Lys Leu Leu Leu
 450 455 460
 Glu Pro Val Asn Leu Leu Ile Leu Asp Glu Pro Thr Asn His Leu Asp
 465 470 475 480
 Leu Lys Thr Lys Asp Ile Leu Lys Gln Ala Leu Lys Asp Phe Asp Gly
 485 490 495
 Thr Leu Ile Val Val Ser His Asp Arg Asp Phe Leu Asp Gly Leu Val
 500 505 510
 Thr Lys Val Tyr Glu Phe Gly Asn Gln Lys Val Thr Glu His Leu Cys
 515 520 525
 Gly Ile Tyr Glu Phe Leu Asp Lys Lys Lys Met Asp Ser Leu Arg Glu
 530 535 540
 Leu Glu Lys
 545

<210> 7847

<211> 473

<212> PRT

<213> B.fragilis

<400> 7847

His Tyr Cys Ile Ile His Ile Gly His Lys Gln Asn Ile His Arg Thr
 1 5 10 15
 Lys Arg Thr Arg Asn Gln Gln Asp Arg Tyr His Arg Leu Ser Trp Cys
 20 25 30
 Glu Thr His Cys Gln Glu Leu Met Met Asn Met Val Leu Val Arg Phe
 35 40 45
 Glu Arg Ala Leu Ala Thr Ala Asn Thr Asn His His His Thr Asp His
 50 55 60
 Ile Glu Cys Arg Asp Asn Gln Arg Thr Glu Ser Asn His Glu Ser Thr
 65 70 75 80
 Phe Gly Ile Arg Gly Asp Ile Gln Ile Val Leu Ala Val Phe Asp Gly
 85 90 95
 Lys Glu Arg Glu His Ile Ala Gln Ser Gln Ala Ala Arg Ile Thr His
 100 105 110
 Lys Asn Leu Thr Gly Thr Phe Arg Thr Ala Glu Asp Val Ile Val Lys
 115 120 125
 Glu Arg Asp Gln His Thr Glu Arg Gly Lys Gly Glu His Ala Val Arg
 130 135 140
 Pro Lys Phe Phe Leu His Glu Gln Glu Ala Glu Asp Lys Gln Gly Asn
 145 150 155 160
 Ala Ala Gln Thr Gly Gly Lys Thr Val Asp Thr Val Asn Gln Ile Asp
 165 170 175
 Gly Ile Gly Asp Lys Asp Asn Gln Lys Asn Arg Lys Arg His Thr Tyr
 180 185 190
 Pro Gly Arg Lys Gly Ile Gln Ala Glu Lys Thr Val Glu Val Ile Asp
 195 200 205
 Pro Lys Ala Gly Gln Gly Lys Lys Arg Ser Thr Asp Asp Leu Asp His
 210 215 220
 Lys Phe Leu Thr Val Ala His Ser Asp Lys Val Ile Gly Asn Thr Arg
 225 230 235 240
 Gln Val Glu Gln Ser His Pro Ala Asp Gln Lys Gln Ala Leu Gly Gln
 245 250 255
 Gln Val His Arg Thr Glu Gly Gly Asn Ile Ile Thr His Gln Asp Ala

260 265 270
 Lys Gly Glu His Ala Thr Gly Gly Lys Gln Asp Gly Gly Glu Glu Arg
 275 280 285
 Asp Thr Ala Gln Thr Gly Asn Gly Thr Phe Met Asn Leu Ala Leu Thr
 290 295 300
 Arg His Ile Glu Lys Leu Leu Pro Gln Arg Asp Lys Gln Asp Ala Gly
 305 310 315 320
 Asn Asp Lys Pro Gly Asn Arg Ser Arg Asp Asp Lys Ser Gln Tyr Asp
 325 330 335
 Glu Lys Asp Ile Gln Asp Lys Gly Asp Leu Gly Tyr Ile Gln Cys Cys
 340 345 350
 Val Glu Lys Glu Lys Ser Leu Leu Leu Tyr Phe Pro Val Gly Ile Arg
 355 360 365
 Ile Leu Phe Lys Thr Ala Glu Leu Phe Gly Asn Leu Thr Phe Ile Ala
 370 375 380
 Gly Lys Gly Thr Leu Ser Pro Ala Val Asp Asp Ala Met Arg Leu Thr
 385 390 395 400
 Gly Glu Val Val Val Lys Asp Phe Thr Ile Ala Ile Ser Gln Lys Ala
 405 410 415
 His Leu Gln Gln Gly Ser Gly Gln Ala Val Glu His Phe Pro Thr Thr
 420 425 430
 Val Gln Asp Leu Leu Asp Ala Asp Phe Leu Val Thr Val Ile Val Asp
 435 440 445
 Arg Arg Val Ile Thr His Gln Lys Arg Lys Ala Gln Thr Gly Phe Phe
 450 455 460
 Leu Val Gly Gly Ala Met Met Gly Ile
 465 470

<210> 7848
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 7848
 Ser Ile Gly Ile Cys Phe Pro Phe Ala Arg Lys Val Cys Pro Asn Ile
 1 5 10 15
 Val Thr Phe Ala Glu Ile Asn Lys Glu Ser Met Thr Lys Val Gly Leu
 20 25 30
 Leu Ser Asp Thr His Ser Trp Trp Asp Glu Lys Tyr Leu Gln Tyr Phe
 35 40 45
 Glu Thr Cys Asp Glu Ile Trp His Ala Gly Asp Ile Gly Ser Val Glu
 50 55 60
 Val Ala Gln Lys Leu Ala Ala Phe Arg Pro Phe Arg Ala Val Tyr Gly
 65 70 75 80
 Asn Ile Asp Gly Gln Glu Ile Arg Arg Met Phe Pro Gln Val Asn Arg
 85 90 95
 Phe Thr Val Asp Gly Ala Glu Val Leu Met Lys His Ile Gly Gly Tyr
 100 105 110
 Pro Gly Asn Tyr Asp Pro Ser Ile Lys Gly Ser Leu Leu Val His Pro
 115 120 125
 Pro Lys Leu Phe Ile Ser Gly His Ser His Ile Leu Lys Val Lys Tyr
 130 135 140
 Asp Lys Thr Leu Asp Met Leu His Ile Asn Pro Gly Ala Ala Gly Met
 145 150 155 160
 Ser Gly Phe His Lys Val Arg Thr Met Val Arg Phe Ala Ile Asp Asn
 165 170 175
 Gly Val Phe Lys Asp Leu Glu Val Ile Glu Leu Ala Gly
 180 185

<210> 7849
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7849

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Leu Leu Thr Ile Lys Asn Tyr Gln Thr Met Ala Val Pro Tyr Lys Lys
1      5      10      15
Ile Ala Arg Lys Asp Pro Arg Lys Thr Asp Ala Ile Glu Lys Phe Tyr
      20      25      30
Pro Gln Leu Val Thr Leu Gly Gln Ser Ala Ser Leu Glu Ser Ile Ala
      35      40      45
Tyr Glu Met Lys Glu Lys Ser Ser Leu Ser Ser Gly Asp Ile Lys Ser
      50      55      60
Val Leu Thr Asn Phe Val Glu Ala Met Arg Thr Ser Leu Tyr Asn Gly
65      70      75      80
Gln Ser Val Asn Ile Arg Asp Phe Gly Val Phe Ser Leu Ser Ala Arg
      85      90      95
Thr Lys Gly Val Asp Thr Glu Lys Glu Cys Thr Ala Lys Asn Ile Met
      100      105      110
Ala Val Lys Ile Asn Phe Arg Pro Ser Ser Ser Val Arg Pro Asn Leu
      115      120      125
Thr Ser Thr Arg Ala Gly Asp Lys Ile Glu Phe Ile Asp Ile Lys Ala
      130      135      140
Ala Leu Glu Gly Lys Glu Ser Glu Lys Gly Gly Asp Gly Asp Ile Val
145      150      155      160
Asp Asp Pro Thr Ala
      165
  
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<210> 7850
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 7850

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Phe Asn Tyr Met Gln Tyr Asn Thr Gln Gln Lys Arg Met Pro Leu Pro
1      5      10      15
Glu Tyr Gly Arg Ser Ile Gln Asn Met Val Asp Phe Ala Leu Thr Ile
      20      25      30
Gln Asp Arg Ser Glu Arg Gln Arg Cys Ala Asn Thr Ile Ile Asn Ile
      35      40      45
Met Gly Asn Met Phe Pro His Leu Arg Asp Val Pro Asp Phe Lys His
      50      55      60
Lys Leu Trp Asp His Leu Ala Ile Met Ala Asp Phe Lys Leu Asp Ile
65      70      75      80
Asp Tyr Pro Tyr Glu Ile Ile Arg Lys Asp Asn Leu Val Thr Lys Pro
      85      90      95
Asp Pro Ile Pro Tyr Pro Ser Thr Lys Ile Arg Tyr Arg His Tyr Gly
      100      105      110
Arg Thr Leu Glu Ile Leu Ile Lys Lys Ala Cys Glu Phe Gln Glu Gly
      115      120      125
Asp Glu Lys Lys Asn Leu Val Ala Leu Ile Cys Asn His Met Lys Lys
      130      135      140
Asp Tyr Met Ala Trp Asn Lys Asp Thr Val Asp Asp Arg Lys Ile Ala
145      150      155      160
Glu Asp Leu Ala Glu Phe Ser Gly Gly Lys Leu Gln Met Asp Asp Glu
      165      170      175
Ile Leu Arg Leu Met Ser Glu Arg Ile Ala Gln Asn Tyr Arg Pro Arg
      180      185      190
  
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Thr Asn Asn Asn Asn Asn Gln Arg Asn Asn Asn Gln Arg Arg Lys Phe
 195 200 205

<210> 7851
 <211> 290
 <212> PRT
 <213> B.fragilis

<400> 7851

Tyr Ser Ile Ile Met Pro Lys Lys Lys Arg Ser Lys Ala Phe Trp Asn
 1 5 10 15
 Asn Ile Lys Phe Lys Tyr Lys Leu Thr Ile Ile Asn Glu Asn Thr Leu
 20 25 30
 Glu Glu Val Val Gly Leu His Val Ser Lys Leu Asn Gly Leu Ser Val
 35 40 45
 Leu Leu Ser Val Leu Thr Val Leu Phe Leu Phe Ala Ala Ala Ile Ile
 50 55 60
 Thr Phe Thr Pro Leu Arg Asn Tyr Leu Pro Gly Tyr Met Asn Ser Asp
 65 70 75 80
 Ile Arg Ala Gln Val Val Glu Asn Ala Leu Arg Val Asp Ser Leu Gln
 85 90 95
 Gln Leu Val Asp Arg Gln Asn Met Tyr Ile Met Asn Ile Gln Asp Ile
 100 105 110
 Phe Ser Gly Thr Val Arg Val Asp Thr Val Gln Ser Met Asp Ser Leu
 115 120 125
 Thr Thr Met Arg Glu Asp Ser Leu Ile Ala Arg Ser Glu Arg Glu Glu
 130 135 140
 Ala Phe Arg Arg Gln Tyr Glu Glu Thr Glu Lys Tyr Asn Leu Thr Ser
 145 150 155 160
 Ile Thr Ala Gln Pro Asp Val Asn Gly Leu Ile Phe Tyr Arg Pro Thr
 165 170 175
 Arg Gly Met Ile Ser Asp His Phe Asp Ala Glu Lys Lys His Phe Gly
 180 185 190
 Thr Asp Ile Ala Ala Asn Pro Asn Glu Ser Val Leu Ala Thr Leu Asp
 195 200 205
 Gly Thr Val Ile Leu Ser Thr Tyr Thr Ala Glu Thr Gly Tyr Leu Ile
 210 215 220
 Glu Val Gln His Asn Gln Asp Phe Val Ser Val Tyr Lys His Cys Gly
 225 230 235 240
 Ser Leu Leu Lys Arg Glu Gly Asp Thr Val Lys Gly Gly Glu Ala Ile
 245 250 255
 Ala Leu Val Gly Asn Ser Gly Thr Leu Thr Thr Gly Pro His Leu His
 260 265 270
 Phe Glu Leu Trp His Arg Gly Arg Pro Val Asn Pro Glu Lys Tyr Ile
 275 280 285
 Val Phe
 290

<210> 7852
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 7852

Thr Lys Ile Met Ser Gln Leu Asn Asp Ile Ser Leu Val Ala Gln Val
 1 5 10 15
 Val Val Phe Arg Asn Thr Arg Ala Phe Asp Gln Leu Val Gln Lys Tyr
 20 25 30
 Gln Ser Pro Val Arg Arg Phe Phe Leu Asn Leu Thr Cys Gly Asp Ser

35	40	45
Glu Leu Ser Asp Asp Leu	Ala Gln Asp Thr Phe Ile	Lys Ala Tyr Thr
50	55	60
Asn Ile Ala Asn Phe Lys	Asn Leu Ser Ser Phe Ser	Thr Trp Leu Tyr
65	70	75
Arg Ile Ala Tyr Asn Val	Phe Tyr Asp Tyr Ile Arg	Ser Arg Lys Glu
85	90	95
Thr Thr Asp Leu Asp Ala	Arg Glu Val Asp Ala Ala	Asn Ser Thr Glu
100	105	110
Gln Val Asn Val Gly Glu	Gln Met Asp Val Tyr Gln	Ser Leu Arg Thr
115	120	125
Leu Lys Glu Ile Glu Arg	Thr Cys Ile Thr Leu Phe	Tyr Met Glu Asp
130	135	140
Val Ser Ile Asp Lys Ile	Ala Gly Ile Thr Gly Cys	Pro Val Gly Thr
145	150	155
Val Lys Ser His Leu Ser	Arg Ala Lys Asp Lys Leu	Ala Ile Tyr Leu
165	170	175
Lys Gln Asn Gly Tyr Asp	Gly Asn Arg	
180	185	

<210> 7853

<211> 341

<212> PRT

<213> B.fragilis

<400> 7853

Ile Tyr Lys Ile Val Met Lys	Ile Tyr Leu Val Cys Gln Thr Trp Ser
1	5 10 15
Asn Thr Lys Asn Asn His Ala Gly	Ile Leu Tyr Leu Cys Asn Gln Leu
20	25 30
Ala Ala Ile Asn Pro Asp Ile Gln	Val Ile Ala Met Pro Glu Phe Lys
35	40 45
Ser Ile Gly Arg Phe Phe Leu Tyr	His Ile Trp His Leu Tyr Tyr Ala
50	55 60
Phe Tyr Leu Tyr Leu Ser Thr Lys	Asp Gly Asp Cys Val Ile Leu Met
65	70 75
Glu Tyr Leu Leu Ser Lys Ser Leu	Asp Gln Ser Leu Ile Ala Ser Phe
85	90 95
Leu Lys Arg Thr Lys Pro Asn Val	Arg Ile Ile Ala Leu Pro His Leu
100	105 110
Val Ser Lys Leu Ile Lys Lys His	Phe Ser Glu Lys Glu Ile Val Asp
115	120 125
Arg Ile Ser Lys Val Asp Ser Val	Trp Val Leu Gly Ser Ser Leu Lys
130	135 140
Thr Phe Leu Cys Ser Leu Gly Val	Pro Asn Asp Lys Ile Arg Val Ile
145	150 155
Phe His Tyr Val Asp Thr Glu Tyr	Tyr Lys Gly Glu Val Cys Lys Val
165	170 175
Pro Asn Phe Arg Leu Arg Val Val	Val Met Gly Asn Met Gln Arg Asp
180	185 190
Tyr Asp Leu Leu Phe Glu Val Ile	Ser Ala Leu Pro Leu Ile Asp Phe
195	200 205
Asp Val Cys Ala Gly Val Ser Lys	Ala Thr Glu Asn Leu Thr Ser Leu
210	215 220
Lys Asn Val Thr Leu His Ser Tyr	Met Ser Glu Asp Thr Leu Arg Gly
225	230 235
Ile Met Asn Lys Ala Asp Val Ser	Leu Asn Ile Met Lys Asp Thr Ile
245	250 255
Gly Ser Asn Val Ile Val Thr Ser	Met Ala Met Gly Leu Ala Met Val

	260		265		270
Val	Ser	Asp	Val	Gly	Ser
	275		280		285
Leu	Phe	Cys	Leu	Thr	Ser
	290		295		300
Glu	Ala	Asp	Arg	Asp	Met
	305		310		315
Lys	Ala	Gln	Gly	Met	Asn
			325		330
Met	Val	Tyr	Glu	Ser	
			340		

<210> 7854
 <211> 301
 <212> PRT
 <213> B.fragilis

	<400> 7854
Lys	Lys
1	5
Leu	Ala
	20
Ile	Gly
	35
Ala	Leu
	50
Phe	Ile
65	70
Arg	Leu
	85
Ala	Met
	100
Gly	Cys
	115
Ala	Leu
	130
Leu	Ser
145	150
Phe	Val
	165
Pro	Asn
	180
Leu	Leu
	195
Gly	Lys
	210
Phe	Tyr
225	230
Leu	Phe
	245
Phe	Phe
	260
Lys	Lys
	275
Met	Gly
	290

Met	Glu	Val	Lys	Arg	Asn	Ser	Leu	Gln	Ala	Trp	Ile
Leu	Ala	Ala	Arg	Pro	Lys	Thr	Leu	Ala	Gly	Ala	Ile
Ile	Gly	Cys	Ala	Leu	Ala	Phe	Ala	Asp	Gly	Lys	Phe
Ala	Leu	Ile	Cys	Cys	Leu	Phe	Ala	Gly	Leu	Met	Gln
Phe	Ile	Asn	Asp	Leu	Phe	Asp	Phe	Leu	Lys	Gly	Thr
Arg	Leu	Gly	Pro	Glu	Arg	Ala	Cys	Ala	Gln	Gly	Trp
Ala	Met	Lys	Gln	Gly	Ile	Phe	Ile	Thr	Val	Gly	Leu
Gly	Cys	Thr	Leu	Leu	Phe	Tyr	Ala	Gly	Trp	Glu	Leu
Ala	Leu	Cys	Val	Leu	Phe	Ala	Phe	Leu	Tyr	Thr	Thr
Leu	Ser	Tyr	Lys	Gly	Trp	Gly	Asp	Val	Leu	Val	Ile
Phe	Val	Pro	Val	Gly	Thr	Tyr	Tyr	Val	Gln	Ala	Leu
Pro	Asn	Val	Thr	Val	Ala	Ser	Leu	Val	Cys	Gly	Leu
Leu	Leu	Val	Val	Asn	Asn	Tyr	Arg	Asp	Arg	Asp	Ala
Gly	Lys	Lys	Thr	Val	Val	Val	Arg	Phe	Gly	Glu	Ser
Phe	Tyr	Leu	Leu	Leu	Gly	Ile	Thr	Ala	Ala	Trp	Leu
Leu	Phe	Asn	Gly	His	Leu	Tyr	Ala	Thr	Leu	Leu	Pro
Phe	Phe	His	Ile	Arg	Thr	Trp	Lys	Lys	Met	Val	Gln
Lys	Lys	Leu	Asn	Ser	Ile	Leu	Gly	Glu	Thr	Ser	Arg
Met	Gly	Ile	Leu	Leu	Ser	Ile	Gly	Leu	Val	Ile	Asn

<210> 7855
 <211> 240

<212> PRT

<213> B.fragilis

<400> 7855

Leu	Ser	Pro	Ile	Ile	Glu	Lys	Ile	Lys	Ile	Cys	Gly	His	Leu	Leu	Leu
1			5					10						15	
Asp	Lys	His	Ser	Gly	Leu	His	Thr	Met	Lys	Asn	Lys	Arg	Tyr	Ser	Arg
			20					25					30		
Gly	Glu	Glu	Leu	Ser	Asn	Thr	Leu	Ser	His	Gly	Ala	Gly	Thr	Leu	Leu
		35					40					45			
Gly	Ile	Thr	Ala	Gly	Tyr	Phe	Leu	Leu	Glu	Lys	Ala	Leu	Ala	Asn	Pro
	50					55					60				
His	Pro	Tyr	Trp	Ala	Thr	Gly	Cys	Val	Leu	Ala	Tyr	Leu	Val	Gly	Met
65					70					75					80
Leu	Ala	Ser	Tyr	Ile	Ser	Ser	Thr	Trp	Tyr	His	Gly	Ser	Arg	Pro	Gly
				85					90					95	
Lys	Arg	Lys	Glu	Leu	Leu	Arg	Lys	Phe	Asp	His	Gly	Ala	Ile	Tyr	Leu
			100					105					110		
His	Ile	Ala	Gly	Thr	Tyr	Thr	Pro	Phe	Thr	Leu	Leu	Val	Leu	Arg	His
	115						120					125			
Ala	Gly	Gly	Trp	Gly	Trp	Gly	Ile	Phe	Thr	Phe	Val	Trp	Leu	Ser	Ala
	130					135					140				
Ile	Val	Gly	Phe	Ile	Leu	Ala	Phe	Lys	Lys	Leu	Lys	Glu	His	Ser	Asn
145					150					155					160
Leu	Glu	Thr	Ile	Cys	Phe	Val	Gly	Met	Gly	Ser	Ala	Ile	Leu	Val	Ala
				165					170					175	
Leu	Lys	Pro	Leu	Met	Asp	Cys	Leu	Ser	Ala	Ile	Gly	Ala	Ser	Pro	Ala
			180					185					190		
Phe	Trp	Trp	Leu	Leu	Gly	Gly	Gly	Ala	Ser	Tyr	Ile	Met	Gly	Ala	Val
	195						200					205			
Phe	Tyr	Ser	Leu	Arg	Lys	Pro	Tyr	Met	His	Ala	Val	Phe	His	Leu	Phe
	210				215						220				
Cys	Leu	Gly	Gly	Ser	Ile	Gly	His	Ile	Ile	Ala	Ile	Trp	Leu	Ile	Leu
225					230					235					240

<210> 7856

<211> 368

<212> PRT

<213> B.fragilis

<400> 7856

Ile	Pro	Phe	Val	Leu	Asn	Ile	Leu	Phe	Ile	Ile	Leu	Ala	Phe	Val	Ile
1				5				10						15	
Ser	Ala	Ser	Val	Ala	Arg	Leu	Ile	Ile	Pro	Arg	Ile	Leu	Leu	Ile	Ser
			20					25					30		
Leu	Arg	Lys	Lys	Leu	Phe	Asp	Met	Pro	Ser	Glu	Arg	Lys	Val	His	Lys
		35					40					45			
Arg	Ala	Ile	Pro	Arg	Leu	Gly	Gly	Val	Ser	Phe	Phe	Pro	Thr	Ile	Leu
	50					55					60				
Leu	Ser	Ser	Cys	Gly	Val	Phe	Ala	Leu	Arg	Ile	Leu	Met	Gly	Tyr	Asp
65					70					75					80
Val	Pro	Ala	Leu	Arg	Ala	Val	Tyr	Leu	Leu	Pro	Glu	Cys	Leu	Phe	Leu
				85				90						95	
Val	Cys	Gly	Met	Thr	Leu	Leu	Tyr	Leu	Thr	Gly	Ile	Ala	Asp	Asp	Leu
			100					105					110		
Val	Gly	Val	Arg	Tyr	Arg	Gln	Lys	Phe	Val	Ile	Gln	Ile	Ile	Cys	Ala
		115					120					125			
Ser	Phe	Phe	Pro	Leu	Ala	Gly	Leu	Trp	Ile	Asn	Asn	Phe	Tyr	Gly	Leu
	130					135					140				

Phe	Gly	Leu	Tyr	Ala	Leu	Pro	Ala	Trp	Ile	Gly	Met	Pro	Phe	Thr	Val
145					150					155					160
Leu	Leu	Val	Val	Phe	Val	Thr	Asn	Ala	Ile	Asn	Leu	Ile	Asp	Gly	Ile
				165					170						175
Asp	Gly	Leu	Ala	Ser	Gly	Leu	Ser	Ser	Val	Ala	Leu	Leu	Val	Phe	Gly
			180					185					190		
Phe	Leu	Phe	Met	Gln	Lys	Glu	Leu	Trp	Thr	Tyr	Ser	Met	Leu	Ala	Phe
	195						200					205			
Ala	Thr	Phe	Gly	Val	Leu	Val	Pro	Phe	Phe	Tyr	Tyr	Asn	Val	Phe	Gly
	210					215					220				
Ser	Ala	Glu	Arg	Ala	Arg	Lys	Ile	Phe	Met	Gly	Asp	Thr	Gly	Ser	Leu
225					230					235					240
Thr	Leu	Gly	Tyr	Val	Leu	Ser	Phe	Leu	Ala	Ile	Lys	Tyr	Ser	Gln	Tyr
				245					250						255
Asn	Leu	Asp	Val	Thr	Pro	Tyr	Thr	Glu	Gly	Ala	Phe	Val	Ile	Ala	Phe
			260					265					270		
Ser	Thr	Leu	Ile	Val	Pro	Ala	Phe	Asp	Val	Ile	Arg	Val	Val	Met	Val
	275						280					285			
Arg	Val	Arg	Ser	Gly	Lys	Ser	Pro	Phe	Glu	Pro	Asp	Lys	Asn	His	Ile
	290					295					300				
His	His	Lys	Phe	Leu	Ala	Met	Gly	Phe	Thr	Pro	Arg	Lys	Ala	Met	Ile
305					310					315					320
Thr	Ile	Leu	Leu	Ile	Ser	Cys	Ala	Phe	Ser	Ala	Val	Asn	Ile	Leu	Phe
				325					330					335	
Met	Pro	Tyr	Val	Asn	Asn	Thr	Ile	Met	Leu	Ile	Gly	Asp	Ile	Thr	Val
			340					345					350		
Trp	Val	Gly	Leu	Asn	Leu	Trp	Trp	Asp	Arg	Ile	Arg	Asp	Asn	Lys	Cys
	355					360						365			

<210> 7857

<211> 143

<212> PRT

<213> B.fragilis

<400> 7857

Ala	Asn	Ile	Val	Trp	Gln	Tyr	Leu	Tyr	Ile	Gln	Glu	Ile	Ile	Gly	Thr
1			5						10					15	
Phe	Ala	Thr	Glu	Ile	Arg	Arg	Arg	Ala	Val	Met	Lys	Thr	Val	Asn	Gln
		20					25						30		
Ile	Ile	Gly	Glu	Asn	Leu	Lys	Lys	Ile	Arg	Glu	Leu	Ser	Gly	Phe	Thr
		35				40						45			
Gln	Glu	Gln	Val	Ala	Gln	Ser	Ile	Lys	Ile	Glu	Arg	Ser	Thr	Tyr	Ser
	50					55					60				
Asn	Tyr	Glu	Gly	Gly	Thr	Arg	Glu	Ile	Pro	Tyr	Thr	Ile	Leu	Glu	Asp
65					70					75				80	
Ile	Ser	Asn	Leu	Phe	Gly	Cys	Glu	Pro	Phe	Ile	Leu	Phe	Glu	Asp	Asn
			85					90					95		
Ile	Gln	Thr	Asn	Asn	Glu	Ile	Met	Ala	Thr	Ala	Phe	Arg	Ile	Ser	Asn
		100					105						110		
Leu	Gly	Glu	Asn	Asp	Leu	Lys	Glu	Ile	Ala	Ala	Phe	Lys	Asp	Ile	Val
	115						120					125			
Lys	Ser	Tyr	Leu	Lys	Met	Glu	Arg	Ile	Ala	Gln	Asn	Glu	Ala	Glu	
	130					135					140				

<210> 7858

<211> 775

<212> PRT

<213> B.fragilis

<400> 7858

Asn	Ile	Ser	Val	Thr	Cys	Met	Thr	Phe	Leu	Cys	Asn	Thr	Lys	Ile	Arg
1				5					10					15	
Pro	Leu	Gln	Ser	Glu	Ile	Thr	Tyr	Thr	Phe	Met	Glu	Thr	Ile	Tyr	Leu
		20						25					30		
Cys	Ile	Ile	Ile	Phe	Leu	Phe	Val	Leu	Ala	Val	Phe	Asp	Leu	Met	Val
	35					40						45			
Gly	Val	Ser	Asn	Asp	Ala	Val	Asn	Phe	Leu	Asn	Ser	Ala	Val	Gly	Ala
	50					55				60					
Lys	Ala	Ala	Ser	Phe	Lys	Thr	Ile	Leu	Phe	Ile	Ala	Gly	Ala	Gly	Ile
65					70					75					80
Phe	Ile	Gly	Ala	Ser	Leu	Ser	Asn	Gly	Met	Met	Asp	Ile	Ala	Arg	His
				85				90						95	
Gly	Ile	Tyr	Gln	Pro	Glu	His	Phe	Tyr	Phe	Ala	Glu	Ile	Met	Cys	Ile
			100					105					110		
Leu	Leu	Ala	Val	Met	Leu	Thr	Asp	Val	Val	Leu	Leu	Asp	Val	Phe	Asn
		115					120					125			
Ser	Met	Gly	Met	Pro	Thr	Ser	Thr	Thr	Val	Ser	Met	Val	Phe	Glu	Leu
	130					135					140				
Leu	Gly	Gly	Thr	Phe	Ala	Leu	Ala	Leu	Ile	Lys	Val	His	Asn	Ser	Asp
145					150					155					160
Thr	Leu	Gly	Leu	Gly	Asp	Leu	Ile	Asn	Thr	Asp	Lys	Ala	Leu	Ser	Val
				165					170					175	
Ile	Met	Ala	Ile	Phe	Val	Ser	Val	Ala	Ile	Ala	Phe	Phe	Phe	Gly	Met
			180					185					190		
Leu	Val	Gln	Trp	Leu	Ala	Arg	Met	Val	Phe	Thr	Phe	Asn	Tyr	Lys	Ser
		195					200					205			
Asn	Ile	Lys	Tyr	Ser	Ile	Ala	Leu	Phe	Gly	Gly	Ile	Ala	Ser	Thr	Ala
	210					215					220				
Ile	Val	Tyr	Phe	Met	Val	Ile	Lys	Gly	Leu	Lys	Asp	Ser	Ser	Phe	Met
225					230					235					240
Thr	Pro	Glu	Asn	Lys	Gln	Trp	Val	Gln	Glu	Asn	Thr	Met	Met	Leu	Val
				245					250					255	
Ser	Cys	Phe	Phe	Val	Ile	Ser	Thr	Ile	Leu	Met	Gln	Ile	Leu	His	Trp
		260						265					270		
Leu	Lys	Val	Asn	Val	Phe	Lys	Val	Val	Val	Leu	Leu	Gly	Thr	Phe	Ala
	275						280					285			
Leu	Ala	Leu	Ala	Phe	Ala	Gly	Asn	Asp	Leu	Val	Asn	Phe	Ile	Gly	Val
	290					295				300					
Pro	Leu	Ala	Gly	Tyr	Ser	Ser	Phe	Ile	Asp	Tyr	Thr	Ala	Asn	Gly	Thr
305					310					315					320
Ser	Val	Gly	Pro	Asp	Gly	Phe	Leu	Met	Thr	Ser	Leu	Met	Gly	Ser	Ala
				325					330					335	
Lys	Thr	Pro	Trp	Tyr	Phe	Leu	Ile	Gly	Ala	Gly	Ala	Val	Met	Val	Tyr
		340						345					350		
Ala	Leu	Cys	Thr	Ser	Lys	Lys	Ala	His	Ala	Val	Ile	Lys	Thr	Ser	Val
	355						360					365			
Asp	Leu	Ser	Arg	Gln	Asp	Glu	Gly	Glu	Glu	Asn	Phe	Gly	Ser	Thr	Pro
	370					375					380				
Ile	Ala	Arg	Thr	Leu	Val	Arg	Phe	Ser	Leu	Thr	Leu	Ala	Asn	Gly	Ile
385					390					395					400
Ser	Arg	Ile	Thr	Pro	Ser	Ala	Lys	Arg	Trp	Ile	Asp	Thr	Arg	Phe	
			405					410					415		
Arg	Lys	Asp	Glu	Ala	Ile	Ile	Ala	Asp	Gly	Ala	Ala	Phe	Asp	Leu	Val
		420						425					430		
Arg	Ala	Ser	Val	Asn	Leu	Val	Leu	Ala	Gly	Leu	Leu	Ile	Ala	Val	Gly
	435						440					445			
Thr	Ser	Leu	Lys	Leu	Pro	Leu	Ser	Thr	Thr	Tyr	Val	Thr	Phe	Met	Val
	450					455					460				

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Ala Met Gly Thr Ser Leu Ala Asp Arg Ala Trp Gly Arg Asp Ser Ala
 465 470 475 480
 Val Tyr Arg Ile Thr Gly Val Leu Ser Val Ile Gly Gly Trp Phe Ile
 485 490 495
 Thr Ala Gly Ala Ala Phe Thr Ile Cys Phe Phe Val Ala Met Val Ile
 500 505 510
 His Phe Gly Gly Ser Ile Ala Ile Ile Ala Leu Ile Gly Leu Ala Ala
 515 520 525
 Phe Thr Leu Ile Arg Ser Gln Leu Met Tyr Lys Lys Lys Lys Glu Lys
 530 535 540
 Glu Lys Gly Asn Glu Thr Leu Lys Gln Leu Met Gln Ala Thr Ser Ser
 545 550 555 560
 His Glu Ala Leu Glu Leu Met Arg Lys His Thr Arg Glu Glu Leu Ser
 565 570 575
 Lys Val Leu Glu Tyr Ala Glu Gln Asn Phe Glu Leu Thr Val Thr Ser
 580 585 590
 Phe Leu His Glu Asn Leu Arg Gly Leu Arg Arg Ala Met Gly Ser Thr
 595 600 605
 Lys Phe Glu Lys Gln Leu Ile Lys Gln Met Lys Arg Thr Gly Thr Val
 610 615 620
 Ala Met Cys Lys Leu Asp Asn His Thr Val Leu Glu Lys Gly Leu Tyr
 625 630 635 640
 Tyr Tyr Gln Gly Asn Asp Phe Ala Ser Glu Leu Val Tyr Ser Ile Ser
 645 650 655
 Arg Leu Cys Glu Pro Cys Leu Glu His Ile Asp Asn Asn Phe Asn Pro
 660 665 670
 Leu Asp Ala Ile Gln Lys Gly Glu Phe Gly Asp Val Ala Glu Asp Ile
 675 680 685
 Thr Tyr Leu Ile Gln Gln Cys Arg Gln Lys Leu Glu Gly Asn Asn Tyr
 690 695 700
 Ser Asn Leu Glu Glu Asp Leu His Arg Ala Asn Asp Leu Asn Ser Gln
 705 710 715 720
 Leu Ser His Leu Lys Arg Gln Glu Leu Gln Arg Ile Gln Ser Gln Thr
 725 730 735
 Gly Ser Ile Lys Val Ser Met Val Tyr Leu Thr Met Ile Gln Glu Ala
 740 745 750
 Gln Asn Val Val Thr Tyr Thr Ile Asn Leu Met Lys Val Ser Arg Lys
 755 760 765
 Phe Gln Ile Glu Thr Asp Ile
 770 775

<210> 7859

<211> 297

<212> PRT

<213> B.fragilis

<400> 7859

Cys Val Asp Val Leu Met Asn Glu Leu Glu Asp Ile Tyr Lys Arg Ile
 1 5 10 15
 Glu Tyr Leu Arg Asn Asn Gly Val Lys Met Lys Glu Ile Ala Asp Trp
 20 25 30
 Ile His Met Ala Pro Ser Val Leu Ser Ala Leu Tyr Ser Ser Val Leu
 35 40 45
 Pro Thr Tyr Leu Asn Leu Gln Lys Thr Lys Pro Arg Glu Glu Ala Leu
 50 55 60
 Asp Glu Ala Leu Ala Leu Val Asn Asn Val Ser Lys Lys Arg Leu Leu
 65 70 75 80
 Gly Asn Leu Gly Glu Met Lys Glu Arg Leu Phe Asp Leu Glu Pro Asn
 85 90 95

Gln Glu Ala Asn Ile Thr Gly Asn Ala Phe Leu Lys Leu Leu Glu Lys
 100 105 110
 Glu Met Gln Glu Ser Val Gly Glu Val Tyr Asn Tyr Ser Gly Thr Tyr
 115 120 125
 Leu Ser Tyr Ser Leu Ser Ser Ser Thr Asp Ser Leu Lys Ala Glu Pro
 130 135 140
 Tyr Leu Ile Cys Ala Ser Glu Asn Asn Asp Tyr Val Lys Val Gly Met
 145 150 155 160
 Ile Asn Ala Tyr Lys Ser Val His Trp Gly Ser Gly Ile Ile Ser Asn
 165 170 175
 His Gln Asn Ser Tyr Leu Met Phe Asn Glu Arg Glu Leu Pro Gln Phe
 180 185 190
 Ala Leu Val Thr Ile Tyr Leu Gln Leu Pro His Tyr Glu Phe Pro His
 195 200 205
 Met Leu Lys Gly Leu Tyr Leu Cys Leu Asp Tyr Asn His Asn Pro Ile
 210 215 220
 Ala Arg Arg Ile Val Leu Val Lys Gln Ser Asp Ser Thr Asp Ile Asp
 225 230 235 240
 Glu Phe Leu Lys Met Glu Gly Lys Leu Ile Ser Arg Ser Glu Leu Thr
 245 250 255
 Pro Glu Glu Glu Ile Tyr Tyr Asn Tyr Thr Cys Gln Glu Gly Asp Tyr
 260 265 270
 Ile Lys Thr Cys Thr Val Pro Ser Pro Lys Leu Asn Glu Ser Asp Leu
 275 280 285
 Glu Arg Glu Lys Lys Met Leu Lys Ile
 290 295

<210> 7860
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 7860
 Asn Tyr Pro Val Phe Leu His Lys Thr Phe Gly Asn Met Ile Gln Ser
 1 5 10 15
 Met Thr Gly Tyr Gly Lys Ala Thr Ala Glu Leu Pro Asp Lys Lys Ile
 20 25 30
 Asn Val Glu Ile Lys Ser Leu Asn Ser Lys Ala Met Asp Leu Ser Ala
 35 40 45
 Arg Ile Ala Pro Ala Tyr Arg Glu Lys Glu Met Glu Ile Arg Asn Glu
 50 55 60
 Ile Ala Arg Val Leu Glu Arg Gly Lys Val Asp Phe Ser Leu Trp Val
 65 70 75 80
 Glu Lys Lys Glu Cys Ala Asp Ala Ala Thr Pro Ile Asn Gln Val Leu
 85 90 95
 Val Glu Gly Tyr Tyr Asn Gln Ile Lys Ala Ile Ser Glu Asn Leu His
 100 105 110
 Ile Ala Val Pro Thr Asp Trp Phe Gln Thr Leu Leu Arg Met Pro Asp
 115 120 125
 Val Met Thr Arg Thr Glu Thr Gln Glu Leu Ser Glu Glu Glu Trp Gly
 130 135 140
 Ile Val Tyr Ala Ala Val Lys Glu Ala Val Ser His Leu Val Asp Phe
 145 150 155 160
 Arg Lys Gln Glu Gly Ala Ala Leu Glu Lys Lys Phe Arg Glu Lys Ile
 165 170 175
 Ala Asn Ile His Arg Leu Leu Glu Ser Val Thr Pro Tyr Glu Lys Glu
 180 185 190
 Arg Val Asp Lys Val Lys Glu Arg Ile Thr Asp Ala Leu Glu Lys Thr
 195 200 205

Leu Asn Val Asp Tyr Asp Lys Asn Arg Leu Glu Gln Glu Leu Ile Tyr
 210 215 220
 Tyr Ile Glu Lys Leu Asp Ile Asn Glu Glu Lys Gln Arg Leu Gly Asn
 225 230 235 240
 His Leu Lys Tyr Phe Ile Ser Thr Leu Glu Ser Gly Ser Gly Gln Gly
 245 250 255
 Lys Lys Leu Gly Phe Ile Ala Gln Glu Met Gly Arg Glu Ile Asn Thr
 260 265 270
 Leu Gly Ser Lys Ser Asn His Ala Glu Met Gln Lys Ile Val Val Gln
 275 280 285
 Met Lys Asp Glu Leu Glu Gln Ile Lys Glu Gln Val Leu Asn Val Met
 290 295 300

<210> 7861

<211> 376

<212> PRT

<213> B.fragilis

<400> 7861

Ser Ile His Val Tyr Glu Tyr Met Lys Lys Ile Leu Phe Met Gly Asn
 1 5 10 15
 Thr Ala Trp Ser Met Tyr Asn Phe Arg Arg Val Val Phe Ser Asp Leu
 20 25 30
 Ile Ser Leu Gly Tyr Ile Ile Tyr Ile Val Ala Pro Leu Asp Val Lys
 35 40 45
 Phe Gln Lys Glu Leu Glu Lys Leu Gly Cys Lys Phe Ile Ser Leu Asp
 50 55 60
 Ile Lys Ala Lys Gly Thr Asn Pro Phe Arg Asp Phe Ile Leu Ile Phe
 65 70 75 80
 Gln Ile Lys Lys Ile Leu Glu Lys Val Gln Pro Asp Phe Cys Phe Phe
 85 90 95
 Tyr Thr Ile Lys Pro Asn Ile Tyr Gly Ser Ile Ala Ala Ser Met Leu
 100 105 110
 His Ile Pro His Ile Ala Ile Ile Thr Gly Leu Gly Tyr Thr Phe Ile
 115 120 125
 Asn His Asn Leu Ile Ser Tyr Ile Ala Lys Cys Leu Tyr Lys Ile Ala
 130 135 140
 Leu Val Lys Ala Lys Glu Val Trp Phe Leu Asn Lys Asp Asp Lys Glu
 145 150 155 160
 Thr Phe Val Ser Lys Lys Ile Val Lys Gly Thr Lys Val Gln Leu Leu
 165 170 175
 Pro Gly Glu Gly Ile Asp Leu Lys Arg Phe Ser Lys Lys Pro Met Val
 180 185 190
 Pro Asp Val Ser Phe Leu Leu Met Ala Arg Met Leu Trp Asp Lys Gly
 195 200 205
 Ile Gly Glu Phe Val Glu Ala Ala Lys Phe Ile Lys Gln Arg Tyr Pro
 210 215 220
 Asp Thr Arg Phe Cys Leu Leu Gly Phe Ile Gly Val Asp Asn Pro Thr
 225 230 235 240
 Ala Ile Pro Lys Glu Arg Ile Glu Glu Trp Cys Ser Met Gly Leu Val
 245 250 255
 Glu Tyr Leu Gly Val Thr Ser Asp Val Arg Pro Phe Ile Glu Asn Cys
 260 265 270
 Ser Cys Val Val Leu Pro Ser Tyr Arg Glu Gly Val Pro Val Ser Leu
 275 280 285
 Leu Glu Gly Ala Ala Met Gly Arg Pro Leu Ile Thr Thr Asp Ala Ala
 290 295 300
 Gly Cys Lys Glu Ala Val Glu Asp Thr Val Asn Gly Tyr Leu Cys Glu
 305 310 315 320

<400> 7862

<400> 7863

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<210> 7864
<211> 64
<212> PRT
<213> B.fragilis
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<400> 7864

Ile Leu Thr Thr Ser Val Ser Phe Leu Phe Val Thr Phe Leu Tyr Met
 1 5 10 15
 Trp Gln Ala Lys Phe Ala Lys Leu Ser Asp Leu Thr Lys Ser Phe Leu
 20 25 30
 Ile Tyr Leu Trp Gly Phe Val Lys Arg Glu Leu Phe Tyr Cys Asn Phe
 35 40 45
 Val Leu Trp Ser Lys Gln Ile Val Tyr Ile Leu Phe Arg Tyr Gly Leu
 50 55 60

<210> 7865

<211> 151

<212> PRT

<213> B.fragilis

<400> 7865

Gly Thr Asp Tyr Ala Pro Ser Gly Gln Phe Glu Lys Met Phe Asn Thr
 1 5 10 15
 Asp Leu Gly Ala Gly Val Gly Thr Gly Val Ala Gln Ile Ala Gly Gly
 20 25 30
 Gln Ala Asp Gly Tyr Asn Phe Phe Pro Gln Gln Asp Leu Ser Ser Pro
 35 40 45
 Thr Thr Lys Glu Asp Val Met Lys Lys Ser Ile His Val Ile Met Glu
 50 55 60
 Val Glu Phe Asp Lys Lys Val Gly Gly Ser Gly Pro Glu Thr Gly Trp
 65 70 75 80
 Leu Asn Val Val Ala Leu Lys Asp Asn Thr Ala Thr Asn Tyr Ile Thr
 85 90 95
 Asp Phe Glu Ala Gly Lys Val Tyr Phe Ile Asn Leu Ala Asp Ile Lys
 100 105 110
 Asp Ile Met Asp Val Pro Val Pro Val Thr Pro Asp Pro Asp Pro
 115 120 125
 Glu Thr Val Ser Val Asp Leu Thr Val Ser Ile Gly Gln Trp Thr Val
 130 135 140
 Val Gln Val Lys Pro Glu Val
 145 150

<210> 7866

<211> 206

<212> PRT

<213> B.fragilis

<400> 7866

Ile Phe Ile Lys Met Arg Ile Thr Lys Ser Ile Leu Ala Leu Met Ala
 1 5 10 15
 Ala Thr Met Thr Phe Ala Ala Cys Ser Asn Asp Glu Lys Ile Thr Glu
 20 25 30
 Ser Thr Pro Lys Thr Val Ala Leu Thr Val Lys Leu Pro Glu Phe Gly
 35 40 45
 Gly Ala Ser Ser Arg Ala Ile Asp Pro Glu Thr Thr Thr Gly Asn Lys
 50 55 60
 Val Thr Ile Asn Gly Pro Val Lys Ile Ile Ala Arg Val Ser Gln Gly
 65 70 75 80
 Gly Ala Ile Thr Asn Thr Ile Ser Glu Asn Ile Thr Ala Gly Ser Met
 85 90 95
 Ser Thr Ile Thr Val Ser Gly Ala Ala Gln Trp Ile Glu Val Glu Ala
 100 105 110
 Asn Gly Asp Asn Ser Thr Glu Thr Asp Asn Val Asn Thr Arg Gln Gly

115 120 125
 Ser Ala Thr Ser Ser Lys Val Arg Leu Phe Gly Gly Ala Thr Ile Asn
 130 135 140
 Pro Gly Ser Gly Gly Asn Ala Thr Cys Thr Pro Thr Ile Asn Pro Asp
 145 150 155 160
 Met Ala Arg Val Glu Val Lys Gly Ser Leu Ala Gly Pro Trp Thr His
 165 170 175
 Leu Asn Asp Leu Lys Ile Lys Gly Ile Tyr Ile Asn Asn Val Lys Leu
 180 185 190
 Thr Arg Gly Ala Ser Ser Leu Thr Arg Ile Val Ser Ala Ala
 195 200 205

<210> 7867
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 7867

Cys Met Thr Lys Arg Thr Cys Gln Phe Pro Lys His Thr Cys Leu Arg
 1 5 10 15
 Glu Ile Asn Phe Leu Lys Ile Ala Gly Ile Ser Leu Leu Leu Phe Cys
 20 25 30
 Thr Thr Ser Gln Ile Ala Val Ala Asp Ser Tyr Glu Lys Asn Ala Val
 35 40 45
 Thr Ala Thr Gln Gln Ser Lys Thr Glu Lys Ile Thr Gly Lys Ile Val
 50 55 60
 Asp Glu Ser Gly Glu Ala Ile Ile Gly Ala Ser Val Lys Val Gln Gly
 65 70 75 80
 Ser Thr Ile Gly Thr Ile Thr Asn Met Glu Gly Glu Phe Met Ile Pro
 85 90 95
 Asn Val Pro Asn Lys Ala Val Leu Glu Ile Ser Tyr Ile Gly Tyr Lys
 100 105 110
 Pro Leu Glu Val Ala Val Gly Lys Ser Lys Asp Leu Arg Ile Thr Met
 115 120 125
 Glu Glu Asp Thr Lys Thr Leu Asp Glu Val Ile Val Val Gly Tyr Gly
 130 135 140
 Thr Thr Ser Lys Arg Lys Thr Thr Ala Ala Ile Ala Ser Val Asn Thr
 145 150 155 160
 Glu Asp Ile Ile Lys Ala Pro Thr Ala Asn Ile Thr Gln Ser Leu Ala
 165 170 175
 Gly Arg Ala Pro Gly Leu Leu Val Thr Ser Gly Gly Gly Leu Asn
 180 185 190
 Asn Phe Ser Ser Val Ser Ile Arg Gly Gly Gly Thr Pro Leu Tyr Val
 195 200 205
 Ile Asp Asp Val Ile Ser Glu Glu Arg Asp Phe Arg Asn Leu Asn Ala
 210 215 220
 Glu Asp Ile Asp Gln Ile Thr Ile Leu Lys Asp Ala Ala Ser Thr Ala
 225 230 235 240
 Val Tyr Gly Ala Arg Ala Ala Asn Gly Ile Val Met Ile Val Thr Lys
 245 250 255
 Gln Gly Gln Ser Arg Glu Asn Glu Arg Gln Leu
 260 265

<210> 7868
 <211> 540
 <212> PRT
 <213> B.fragilis

<400> 7868

Leu 1	Ile	Gln	Lys	Lys 5	Met	Ala	Asn	Leu	Asp 10	Leu	Ser	Lys	Tyr	Gly 15	Ile
Thr	Gly	Val	Thr 20	Glu	Ile	Leu	His	Asn 25	Pro	Ser	Tyr	Asp	Val 30	Leu	Phe
Ala	Glu	Glu	Thr 35	Lys	Pro	Gly	Leu 40	Glu	Gly	Phe	Glu	Lys 45	Gly	Gln	Val
Thr	Glu	Leu	Gly 50	Ala	Val	Asn 55	Val	Met	Thr	Gly	Val 60	Tyr	Thr	Gly	Arg
Ser 65	Pro	Lys	Asp	Lys 70	Phe	Phe	Val	Lys	Asn 75	Glu	Ala	Ser	Glu	Asn 80	Ser
Val	Trp	Trp	Thr 85	Ser	Glu	Glu	Tyr	Lys 90	Asn	Asp	Asn	Lys	Pro 95	Cys	Ser
Glu	Glu	Ala	Trp 100	Ala	Asp	Leu	Lys	Ala 105	Lys	Ala	Val	Lys	Glu 110	Leu	Ser
Asn	Lys	Arg	Leu 115	Phe	Val	Val	Asp 120	Thr	Phe	Cys	Gly	Ala 125	Asn	Glu	Gly
Thr	Arg	Met	Lys 130	Val	Arg	Phe 135	Ile	Met	Glu	Val	Ala 140	Trp	Gln	Ala	His
Phe 145	Val	Thr	Asn	Met 150	Phe	Ile	Arg	Pro	Thr	Ala 155	Glu	Glu	Leu	Ala 160	Asn
Tyr	Gly	Glu	Pro 165	Asp	Phe	Val	Cys	Phe 170	Asn	Ala	Ser	Lys	Ala 175	Lys	Val
Asp	Asn	Tyr	Lys 180	Glu	Leu	Gly	Leu 185	Asn	Ser	Glu	Thr	Ala 190	Thr	Val	Phe
Asn	Leu	Lys 195	Thr	Lys	Glu	Gln	Val 200	Ile	Leu	Asn	Thr 205	Trp	Tyr	Gly	Gly
Glu	Met	Lys 210	Lys	Gly	Met	Phe 215	Ser	Ile	Met	Asn 220	Tyr	Met	Asn	Pro	Leu
Arg 225	Gly	Ile	Ala	Ser 230	Met	His	Cys	Ser	Ala 235	Asn	Thr	Asp	Met	Glu	Gly
Thr	Ser	Ser	Ala 245	Ile	Phe	Phe	Gly	Leu 250	Ser	Gly	Thr	Gly	Lys	Thr 255	Thr
Leu	Ser	Thr	Asp 260	Pro	Lys	Arg	Lys 265	Leu	Ile	Gly	Asp	Asp 270	Glu	His	Gly
Trp	Asp	Asn 275	Glu	Gly	Val	Phe	Asn 280	Tyr	Glu	Gly	Gly	Cys 285	Tyr	Ala	Lys
Val	Ile	Asn 290	Leu	Asp	Lys	Glu 295	Ser	Glu	Pro	Asp 300	Ile	Phe	Asn	Ala	Ile
Lys 305	Arg	Asp	Ala	Leu 310	Leu	Glu	Asn	Val	Thr	Val 315	Ala	Ala	Asp	Gly	Lys
Ile	Asn	Phe	Ala 325	Asp	Lys	Ser	Val	Thr	Glu 330	Asn	Thr	Arg	Val	Ser	Tyr
Pro	Ile	Tyr	His 340	Ile	Glu	Asn	Ile 345	Val	Lys	Pro	Val	Ser	Lys 350	Gly	Pro
His	Ala	Lys 355	Gln	Val	Ile	Phe	Leu 360	Ser	Ala	Asp	Ala 365	Phe	Gly	Val	Leu
Pro	Pro	Val 370	Ser	Ile	Leu	Asn 375	Pro	Glu	Gln	Ala 380	Gln	Tyr	Tyr	Phe	Leu
Ser 385	Gly	Phe	Thr	Ala 390	Lys	Leu	Ala	Gly	Thr	Glu 395	Arg	Gly	Ile	Thr	Glu
Pro	Thr	Pro	Thr 405	Phe	Ser	Ala	Cys	Phe	Gly 410	Ala	Ala	Phe	Leu	Ser	Leu
His	Pro	Thr	Lys 420	Tyr	Ala	Glu	Glu	Leu 425	Val	Lys	Lys	Met	Glu 430	Met	Thr
Gly	Ala	Lys 435	Ala	Tyr	Leu	Val	Asn 440	Thr	Gly	Trp	Asn	Gly 445	Ser	Gly	Lys
Arg	Ile	Ser	Ile 450	Lys	Asp	Thr 455	Arg	Gly	Ile	Ile	Asp 460	Ala	Ile	Leu	Asp
Gly	Ser	Ile	Asp	Lys	Ala	Pro	Thr	Lys	Val	Ile	Pro	Phe	Phe	Asp	Phe

465 470 475 480
 Val Val Pro Thr Glu Leu Pro Gly Val Asp Pro Lys Ile Leu Asp Pro
 485 490 495
 Arg Asp Thr Tyr Ala Asp Pro Ala Gln Trp Asn Glu Lys Ala Lys Asp
 500 505 510
 Leu Ala Gly Arg Phe Ile Lys Asn Phe Ala Lys Phe Thr Gly Asn Glu
 515 520 525
 Ala Gly Lys Lys Leu Val Ala Ala Gly Pro Lys Leu
 530 535 540

<210> 7869
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 <212> PRT
 <213> B.fragilis

<400> 7869

Arg Gln Glu Asn Ile Met Asn Asn Lys Arg Lys Asn Met Ser Ile Tyr
 1 5 10 15
 Ile Thr Val Leu Leu Trp Ile Leu Ile Pro Leu Leu Ile Ile Asn Gly
 20 25 30
 Leu Ile Phe Leu Thr Ser Asp Met Leu Ser Val Phe Val Gly Gly Met
 35 40 45
 Leu Ser Leu Lys Leu Leu Cys Tyr Ser Leu Phe Phe Ser Tyr Ser Phe
 50 55 60
 Leu Leu Gly Tyr Lys Ala Gln Thr Gly Gly Gly Ile Ile Ile Leu Val
 65 70 75 80
 Leu Leu Leu Ile Leu Gly Leu Phe Leu Trp Gln Ser Phe Ile Ser Trp
 85 90 95
 Val Glu Pro Gly Thr Leu Trp Arg Glu Ala Val Gly Ala Ile Ile Phe
 100 105 110
 Leu Gly Val Ile Leu Ser Val Gly Ile Leu Cys Arg Tyr Gly Ile Lys
 115 120 125
 Ala Gly Gly Leu Leu Arg Leu Ser Ser Ile Leu Ala Phe Ala Ile Val
 130 135 140
 Ala Phe Val Tyr Ile Thr Val Cys Leu Ser Thr Val Cys Gly Ala Tyr
 145 150 155 160
 Ser Pro Ile Pro Glu Glu Leu Phe Trp Lys Asp Ala Tyr Pro Glu Lys
 165 170 175
 Gly Lys Asn Gly Thr Val Phe Phe His His Ser Lys Leu His Ile Asn
 180 185 190
 Pro Phe Asp Ser Arg Val Ile Gly Val Phe Arg Phe Asn Asp Lys Lys
 195 200 205
 Glu Tyr Val Gly Tyr Ser Ala Ser Met Tyr Glu Ser His Glu Ile Val
 210 215 220
 Asn Ser Gly Phe Lys Val Asp Asp Thr Ile Lys Ala Ser Thr Cys Asp
 225 230 235 240
 Phe Ile His Ser Ser Tyr Glu Pro Leu Leu Ser Asn Phe Met Ser Asp
 245 250 255
 Cys Gln Asp Ala Leu Tyr Met Lys Glu Gly Asp Tyr Cys Val Phe Leu
 260 265 270
 Tyr Thr Glu Lys Gly Ala Leu Tyr Arg Lys Glu Phe Asp Tyr His Arg
 275 280 285
 Asn Gly Ile Val Lys Gln Ala Arg Thr Tyr Thr Tyr Asp Arg Lys Thr
 290 295 300
 Gly Phe His Ile Glu Arg Glu Lys Thr Ile Glu Phe Asp Glu Leu Gly
 305 310 315 320
 Phe Cys Asp Lys Ser Gly Arg Val Arg Trp Asn Ile Lys Asp Phe His
 325 330 335
 Gln Thr Asp Thr Val Ile Asp Met Glu Ser Arg Tyr Gly Gln Ala Tyr

340 345 350
 Asp Pro Ala Ala Arg Asn Arg Lys Tyr Ala Leu Pro Gln Gln Leu Ile
 355 360 365
 Ile Asp Ser Phe Val Thr Val Glu Ser Lys Thr Ala Ser Pro Asp Ser
 370 375 380
 Leu Arg Lys Tyr Ser Ser Leu Asp Phe Pro Leu Asp Glu Tyr Tyr Lys
 385 390 395 400
 Leu Gly Gly Val Asn Gly His Ala Ile Ser Val Tyr Val Asn Thr Asp
 405 410 415
 Glu Tyr Lys Trp Arg Lys Ile Tyr Leu Ser Asp Phe Thr Gln Leu Gly
 420 425 430
 Asn Val Glu Gln Met Tyr Ser Phe Ile Asp Ala Leu Glu Leu Ser Cys
 435 440 445
 Leu Asp Thr Gly Met Trp Val Arg Ile Gly Glu Gln Ser Met Val Val
 450 455 460
 Gly Glu Asp Asp Glu Cys Cys Ser Phe Val Leu Lys Glu Val Val Lys
 465 470 475 480
 Gly Gly Lys Ala Leu Ala Leu Tyr Phe Phe Asp Asp Tyr Ala Val Thr
 485 490 495
 Thr Asp Ser Arg Phe Cys Phe Tyr Phe Asn Pro Ser Ile His Lys Asp
 500 505 510
 Met Glu Ile Gln Lys Arg Ala Gly Ala Ala Trp Asn Glu Met Lys Lys
 515 520 525
 Ile Phe Met Glu Tyr Lys Glu Lys Glu Asn
 530 535

<210> 7870
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7870
 Lys Arg Ala Leu Phe Leu Lys Asp Ile Ile His Leu Leu Phe Lys Asp
 1 5 10 15
 Ile Ile Ile Ile Leu Ile Ser Thr Ser Arg Phe Glu Ile Lys Arg Lys
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 Asn Gln Pro Asn Asp Thr Ile Pro Gln Tyr Gly Asp Glu Ile Asn His
 35 40 45
 Thr Lys Asn Glu Ile Cys Val Lys Asn Gly Ile Ile
 50 55 60

<210> 7871
 <211> 637
 <212> PRT
 <213> B.fragilis

<400> 7871
 Tyr Ser Lys Asn Thr Leu Thr Pro Val His Val Asn Pro Lys Phe Lys
 1 5 10 15
 Tyr Ile Asn Arg Ile Met Ala Asp Glu Met Met Val Lys Glu Leu Glu
 20 25 30
 Glu Val Val Val Arg Phe Ser Gly Asp Ser Gly Asp Gly Met Gln Leu
 35 40 45
 Ala Gly Asn Ile Phe Ser Asn Val Ser Ala Thr Val Gly Asn Asp Ile
 50 55 60
 Cys Thr Phe Pro Asp Tyr Pro Ala Asp Ile Arg Ala Pro Gln Gly Ser
 65 70 75 80
 Leu Thr Gly Val Ser Gly Phe Gln Val His Val Gly Ala Ser Lys Ile
 85 90 95

Phe Thr Pro Gly Asp His Cys His Val Leu Val Ala Met Asn Pro Ala
 100 105 110
 Ala Leu Lys Thr Gln Ile Lys Phe Cys Lys Pro Gln Gly Leu Val Ile
 115 120 125
 Thr Asp Ser Asp Ser Phe Gly Glu Lys Asp Leu Glu Lys Ala Gln Phe
 130 135 140
 Lys Thr Gly Asn Pro Phe Glu Glu Met Gly Ile Thr Gln Gln Val Leu
 145 150 155 160
 Glu Val Pro Ile Ser Ser Met Cys Lys Glu Ser Leu Lys Asp Ser Gly
 165 170 175
 Leu Asp Asn Lys Ala Met Leu Arg Cys Lys Asn Met Phe Ala Leu Gly
 180 185 190
 Leu Val Cys Trp Leu Phe Asn Arg Asn Leu Ser Ala Ala Glu Lys Met
 195 200 205
 Leu Asn Glu Lys Phe Ala Lys Lys Pro Glu Ile Ala Ala Ala Asn Ile
 210 215 220
 Lys Val Leu Asn Asp Gly Tyr Asn Tyr Gly Ala Asn Thr His Ala Ser
 225 230 235 240
 Thr Ser Thr Tyr Lys Ile Glu Ser Lys Thr Pro Lys Ala Ala Gly Leu
 245 250 255
 Tyr Thr Asp Ile Asn Gly Asn Lys Ala Thr Ser Tyr Gly Leu Ile Ala
 260 265 270
 Ala Ala Glu Lys Ala Gly Leu Glu Leu Tyr Leu Gly Ser Tyr Pro Ile
 275 280 285
 Thr Pro Ala Thr Asp Ile Leu His Glu Leu Ala Lys His Lys Ser Leu
 290 295 300
 Gly Val Lys Thr Val Gln Cys Glu Asp Glu Ile Ala Gly Cys Ala Ser
 305 310 315 320
 Ala Val Gly Ala Ala Phe Ala Gly Asp Leu Ala Val Thr Thr Thr Ser
 325 330 335
 Gly Pro Gly Val Cys Leu Lys Ser Glu Ala Met Asn Leu Ala Val Ile
 340 345 350
 Ala Glu Leu Pro Leu Val Val Val Asn Val Gln Arg Gly Gly Pro Ser
 355 360 365
 Thr Gly Met Pro Thr Lys Ser Glu Gln Thr Asp Leu Leu Gln Ala Leu
 370 375 380
 Tyr Gly Arg Asn Gly Glu Ser Pro Met Pro Val Ile Ala Ala Thr Ser
 385 390 395 400
 Pro Thr Asn Cys Phe Asp Ala Ala Tyr Met Ala Ala Lys Ile Ala Leu
 405 410 415
 Glu His Met Thr Pro Val Val Leu Leu Thr Asp Ala Phe Ile Ala Asn
 420 425 430
 Gly Ser Ala Ala Trp Lys Leu Pro Asn Met Asp Glu Tyr Pro Ala Ile
 435 440 445
 Asn Pro Pro Tyr Val Thr Pro Asp Met Ile Gly Thr Trp Thr Pro Phe
 450 455 460
 Gln Arg Asn Glu Lys Thr Gly Val Arg Tyr Trp Ala Val Pro Gly Thr
 465 470 475 480
 Glu Gly Phe Met His Arg Ile Gly Gly Leu Glu Lys Ser Ser Glu Thr
 485 490 495
 Gly Val Ile Ser Thr Glu Pro Glu Asn His Gln Lys Met Thr Leu Leu
 500 505 510
 Arg Gln Ala Lys Val Asp Lys Ile Ala Asp Ser Ile Pro Glu Gln Glu
 515 520 525
 Val Gln Gly Asp Ala Asp Ala Asp Leu Leu Val Val Gly Trp Gly Gly
 530 535 540
 Thr Tyr Gly His Leu Tyr Ser Ala Val Glu His Met Arg Lys Asn Gly
 545 550 555 560
 Lys Lys Val Ala Leu Ala His Phe Gln Tyr Ile Asn Pro Leu Pro Lys

565 570 575
 Asn Thr Ala Glu Ile Leu Lys Lys Tyr Lys Lys Ile Val Val Ala Glu
 580 585 590
 Gln Asn Leu Gly Gln Phe Ala Gly Tyr Leu Arg Met Lys Val Pro Gly
 595 600 605
 Leu Asn Ile Ser Gln Phe Asn Gln Val Lys Gly Gln Pro Phe Val Thr
 610 615 620
 Arg Glu Leu Val Glu Ala Phe Thr Lys Leu Leu Glu Glu
 625 630 635

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 <212> PRT
 <213> B.fragilis

<400> 7872
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 Ile Leu Asn Gln Tyr Val Ser Glu Ile Arg Asn Val Glu Val Gln Asn
 20 25 30
 Asp Arg Leu Arg Phe Arg Arg Asn Ile Glu Arg Ile Gly Glu Val Met
 35 40 45
 Ala Tyr Glu Met Ser Lys Thr Phe Ala Tyr Ser Val Lys Glu Ile Gln
 50 55 60
 Thr Pro Leu Gly Ile Ala Pro Val Arg Thr Pro Asp Asn Pro Leu Val
 65 70 75 80
 Ile Ser Thr Ile Leu Arg Ala Gly Leu Pro Phe His Gln Gly Phe Leu
 85 90 95
 Ser Tyr Phe Asp Tyr Ala Glu Asn Ala Phe Val Ser Ala Tyr Arg Lys
 100 105 110
 Tyr Lys Asp Thr Leu Lys Phe Asp Ile His Ile Glu Tyr Ile Ala Ser
 115 120 125
 Pro Arg Ile Asp Gly Lys Thr Leu Ile Ile Thr Asp Pro Met Leu Ala
 130 135 140
 Thr Gly Gly Ser Met Glu Leu Ser Tyr Gln Ala Met Leu Thr Lys Gly
 145 150 155 160
 His Pro Ser Glu Ile His Val Ala Ser Ile Ile Ala Ser Gln Arg Ala
 165 170 175
 Val Asp His Ile Ala Ser Ile Leu Pro Glu Asp Lys Thr Thr Ile Trp
 180 185 190
 Cys Ala Ala Ile Asp Pro Glu Ile Asn Glu His Ser Tyr Ile Val Pro
 195 200 205
 Gly Leu Gly Asp Ala Gly Asp Leu Ala Phe Gly Glu Lys Glu
 210 215 220

<210> 7873
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 7873
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 Pro Arg Trp Cys Pro Gly Cys Gly Asp His Ala Phe Leu Asn Ser Leu
 20 25 30
 His Lys Ala Met Ala Glu Leu Gly Val Ala Pro His Asn Ile Ala Val
 35 40 45
 Ile Ser Gly Ile Gly Cys Ser Ser Arg Leu Pro Tyr Tyr Val Asn Thr
 50 55 60

Tyr Gly Phe His Thr Ile His Gly Arg Ala Ala Ala Val Ala Thr Gly
 65 70 75 80
 Ala Lys Val Ala Asn Pro Asp Leu Thr Ile Trp Gln Ile Ser Gly Asp
 85 90 95
 Gly Asp Gly Leu Ala Ile Gly Gly Asn His Phe Ile His Ala Val Arg
 100 105 110
 Arg Asn Ile Asp Leu Asn Met Ile Leu Leu Asn Asn Arg Ile Tyr Gly
 115 120 125
 Leu Thr Lys Gly Gln Tyr Ser Pro Thr Ser Asp Arg Gly Phe Val Ser
 130 135 140
 Lys Ser Ser Pro Tyr Gly Thr Val Glu Asp Pro Phe His Pro Ala Glu
 145 150 155 160
 Leu Cys Phe Gly Ala Arg Gly Arg Phe Phe Ala Arg Cys Val Ala Val
 165 170 175
 Asp Gly Pro Ala Ser Val Glu Val Leu Lys Ala Ala Ala Asn His Lys
 180 185 190
 Gly Ala Ser Val Val Glu Val Leu Gln Asn Cys Val Ile Phe Asn Asp
 195 200 205
 Gly Thr His Glu Ser Val Ala Thr Lys Glu Gly Arg Ser Lys Asn Ala
 210 215 220
 Ile Tyr Leu Glu His Gly Lys Pro Met Leu Phe Gly Glu Asn Lys Glu
 225 230 235 240
 Phe Gly Leu Met Gln Glu Gly Phe Gly Leu Lys Val Val Lys Leu Gly
 245 250 255
 Glu Asn Gly Val Thr Glu Lys Asp Ile Leu Ile His Asn Ala His Ser
 260 265 270
 Met Asp Asn Thr Leu Gln Leu Lys Leu Ala Leu Met Glu Gly Pro Asp
 275 280 285
 Phe Pro Ile Ala Leu Gly Val Ile Arg Asp Val Glu Ala Pro Thr Tyr
 290 295 300
 Asn Asp Ala Val Ala Glu Gln Ile Asp Glu Val Lys Ala Lys Lys Lys
 305 310 315 320
 Tyr His Asn Phe Gln Glu Leu Leu Met Thr Asn Glu Thr Trp Glu Val
 325 330 335
 Lys

<210> 7874

<211> 60

<212> PRT

<213> B.fragilis

<400> 7874

Gln Gly Lys Asp Asn Ala Pro Ala Lys Arg Ile Thr Tyr Pro Lys Gln
 1 5 10 15
 Pro Phe Thr Ser Pro Phe Pro Arg Leu Tyr Phe Lys Ile Leu Ile Ile
 20 25 30
 Asn Met Leu Val Phe Glu Leu Pro Asp Gln Leu Ser Trp Gly Ile Thr
 35 40 45
 Glu Ile Leu Phe Ala Val Phe Ile Glu Thr Gly Arg
 50 55 60

<210> 7875

<211> 415

<212> PRT

<213> B.fragilis

<400> 7875

Phe Ile Leu Glu Lys Lys Ile Gly Lys Leu Ser Ile Arg Val Leu Leu

1	5	10	15
Asn Thr His Arg Arg Asn Asp Cys Glu Ile Tyr Pro Leu Ile Ile Arg			
Val Val Tyr His Arg Arg Lys Ser Glu Tyr Ser Leu Gly Trp Lys Ile	20	25	30
His Thr Ser Asn Phe Ser Ala Asp Arg Glu Arg Val Val Tyr Ser Ser	35	40	45
Thr Gly Asn Leu Lys Arg Lys Asp Leu Gly Leu Ile Asn Asp Ala Ile	50	55	60
Ser Gln Glu Arg Glu Arg Leu Leu Lys Ile Phe Ala Phe Leu Gln Gln	65	70	75
Asn Met Pro Gly Phe Ser Leu Ser Gln Leu Met Asp Lys Tyr Arg Met	85	90	95
Glu Arg Asn Leu Arg Tyr Val Asp Ala Phe Ile Val Arg Glu Ile Glu	100	105	110
Arg Leu Arg Gln Glu Gly Arg Ser Gly Thr Ala Gly Leu Tyr Leu Ser	115	120	125
Gly Leu Tyr Ser Leu Arg Arg Phe Leu Arg Gly Gln Lys Ile Thr Phe	130	135	140
Arg Glu Leu Thr Tyr Cys Phe Leu Thr Asp Tyr Ile His Phe Leu Arg	145	150	155
Met Arg Gly Ile Ser Glu Asn Thr Val Asn Met Tyr Ile Arg Asn Leu	165	170	175
Arg Ala Val Tyr Asn Lys Ala Gln Lys Gln Gly Ile Asn Met Gly Cys	180	185	190
Glu Ser Pro Phe Arg Glu Leu Lys Leu Gln Thr Gln Glu Thr Ala Lys	195	200	205
Arg Ala Leu Cys Lys His Asp Ile Ala Arg Ile Val Ser Val Asp Leu	210	215	220
Ser Ser Glu Pro Leu Leu Asp Arg Ala Arg Asp Leu Phe Met Phe Ser	225	230	235
Phe Tyr Ala Arg Gly Met Pro Phe Val Asp Ile Val Phe Leu Lys His	245	250	255
Asp Ser Ile Ile Asn Gly Ile Ile Tyr Tyr Glu Arg Asn Lys Thr Gly	260	265	270
Gln Arg Met Gln Val Arg Val Ile Pro Pro Leu Ala Ala Leu Ile Glu	275	280	285
Lys Tyr Arg Ser Ser Tyr Pro Tyr Val Leu Pro Tyr Ile Thr Ser Phe	290	295	300
Ser Asp Arg Thr Ser Tyr Met Gln Tyr Arg Tyr Ala Leu Gly Asn Val	305	310	315
Asn Arg Leu Leu Lys Arg Leu Gly Arg Arg Leu His Leu Pro Leu Val	325	330	335
Leu Thr Thr Tyr Val Ala Arg His Ser Trp Ala Thr Ile Ala Lys Glu	340	345	350
Glu Gly Phe Ser Ile Ala Ser Ile Ser Glu Gly Leu Gly His Thr Ser	355	360	365
Glu Ala Thr Thr Gln Ile Tyr Leu Gln Ser Phe Asn Ser Glu Val Ile	370	375	380
Asp Lys Ile Asn Glu Gln Val Val Ala Ser Ile Gly Arg His Ile	385	390	395
	405	410	415

<210> 7876

<211> 117

<212> PRT

<213> B.fragilis

<400> 7876

Ala Glu Gly Glu Arg Lys Glu Asn Glu Gly Asn Cys Leu Thr Val Thr

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<210> 7877
<211> 300
<212> PRT
<213> B.fragilis
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Cys	Thr	Asn	Tyr	Lys	Ser	Glu	Ser	Tyr	Glu	Gly	Phe	Gly	Ile	Gly	Thr
		20						25					30		
Leu	Thr	Ser	Gly	Ser	Asn	Phe	Asn	Ser	Gln	Thr	Leu	Ser	Val	Lys	Thr
		35					40					45			
Asn	Phe	Leu	Ile	Phe	Ile	Leu	Glu	Gly	Glu	Val	Glu	Ile	Ile	Pro	Lys
	50					55					60				
Glu	Gly	Lys	Ile	Lys	Arg	Val	Ile	Ala	Gln	Glu	Phe	Phe	Phe	Ile	Ser
65					70				75						
Ala	Leu	Ser	Thr	Tyr	Glu	Ile	Gln	Val	Arg	Val	Pro	Gly	Arg	Tyr	Ile
			85					90						95	
Tyr	Met	Ser	Phe	Leu	Tyr	Asn	Asp	Ile	Lys	Leu	Cys	Glu	Lys	His	Met
			100					105					110		
Leu	Glu	Ser	Tyr	Leu	Lys	Glu	Val	Arg	Glu	Ala	Ser	Glu	Glu	Val	Gly
			115				120					125			
Ile	Leu	Ser	Val	Arg	His	Pro	Leu	Asn	Leu	Phe	Leu	Glu	Leu	Met	Asp
	130					135					140				
Ala	Tyr	Leu	Arg	Ala	Gly	Val	Asn	Cys	Lys	His	Leu	His	Ser	Ile	Lys
145					150					155					160
Glu	Lys	Glu	Leu	Phe	Ile	Ile	Leu	Arg	Thr	Ser	Tyr	Ser	Lys	Gln	Glu
			165						170					175	
Ile	Val	Asn	Leu	Phe	His	Glu	Ile	Ile	Gly	Thr	Asn	Met	Ser	Phe	Lys
			180					185					190		
Ala	Ala	Val	Leu	Leu	His	Val	Asp	Arg	Val	Asn	Asn	Arg	Glu	Glu	Leu
		195					200					205			
Ala	Gln	Ala	Met	Gly	Met	Ser	Ile	Thr	Asp	Leu	Ala	Arg	Lys	Phe	Lys
	210					215					220				
Val	Glu	Phe	Gly	Glu	Ser	Val	Tyr	Ser	Trp	Leu	Leu	Lys	Gln	Lys	Asn
225					230					235					240
Lys	Lys	Ile	Ile	Tyr	Arg	Leu	Ala	Gln	Pro	Gly	Ala	Ser	Val	Lys	Glu
			245						250					255	
Ile	Val	Tyr	Glu	Phe	Gly	Phe	Ser	Ser	Ala	Ala	Ser	Phe	Asn	Lys	Tyr
			260					265					270		
Cys	Lys	Lys	Asn	Phe	Gly	Asn	Ser	Pro	Arg	Glu	Leu	Val	Arg	Gln	Leu
		275					280					285			
Lys	Asp	Lys	His	Ile	Asp	Asn	Gln	Asn	Leu	Lys	Ile				

[illegible]

290

295

300

<210> 7878
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 7878

Met Cys Met Arg Ser Thr Pro Ser Ala Phe Ile Gly Lys Asn Val Ser
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 Gly Gln Arg Ser Thr Phe Glu Glu Met Ala Thr Glu Met Pro Ile Asp
 20 25 30
 Leu Pro Glu Gly Lys Trp Thr Phe Leu Cys Leu Glu Gly Lys Val Gly
 35 40 45
 Asp Tyr Glu Ile Gly Ile Tyr Arg Gln Val Phe Pro His Lys Phe Ser
 50 55 60
 Pro Ala Val Ser Pro Gly Ile Thr Thr Leu Ser Asp Phe Arg Val Lys
 65 70 75 80
 Ala Tyr Tyr Glu Gln Lys Glu Asn Leu Glu Tyr Ser Leu Gly Glu Leu
 85 90 95
 Phe Phe Gly Arg Leu Asp Ser Met Glu Ile Thr Ala Asp Asn Gly Gly
 100 105 110
 Thr Gly Val Val Asp Leu Met Lys Asn Thr Asn Lys Ile Glu Val Arg
 115 120 125
 Val Lys Gly Ile Ala Asp Gly Ser Ser Ala Arg Ile Thr Ser Asp Asn
 130 135 140
 Gly Arg Phe Asn Ser Glu Asn Val Thr Pro Ala Asp Ala Gly Thr Ile
 145 150 155 160
 Ile Tyr Val Pro Tyr Tyr Ser Ala Ser Gln Thr Asp Asp Thr Arg Val
 165 170 175
 Phe Gln Phe Asp Val Leu Arg Leu Tyr Thr Asp Gly His Leu Phe Leu
 180 185 190
 Lys Leu Leu Asn Pro Asp Gly Thr Asp Val Ile Pro Gly Phe Thr Lys
 195 200 205
 Asp Leu Ile Asn Ala Ile Met Ser Ser Pro Ala Tyr His Thr Gln Glu
 210 215 220
 Asp Leu Asp Arg Glu Asp Thr Tyr Leu Ile Glu Leu Val Leu Ser Lys
 225 230 235 240
 Asp Gly Val Ile Val Ser Leu Arg Val Asn Gly Trp Glu Thr Val Ser
 245 250 255
 Thr Thr Pro Glu Val
 260

<210> 7879
 <211> 81
 <212> PRT
 <213> B.fragilis

<220>

<221> UNSURE

<222> (48)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7879

Asn Arg Gln Arg Thr Leu Leu Tyr Cys Lys Pro Thr Thr Met Ser Ser
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 Pro Leu Ser Arg Tyr Pro His Gly Gly Ala Met Asp Leu Glu Phe Val
 20 25 30
 Met Arg Gln Thr Ala Arg Met Ser Gln Arg Ser Met Asn Pro Asp Xaa

35 40 45
 Ser Trp Gly Phe Thr Ser Leu Asp Pro Ser Pro Leu Asn Leu Leu Ile
 50 55 60
 Lys Lys Ser Lys Val Phe Pro Gly Leu Pro Val Pro Phe Lys Lys His
 65 70 75 80
 Trp

<210> 7880
 <211> 277
 <212> PRT
 <213> B.fragilis

<400> 7880
 Ser Ile Val Arg Val Glu Lys Arg Phe Ser Lys Ile Phe Ser Ile Val
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 Val Tyr Ala Phe Leu Ala Leu Trp Met Gly Ala Cys Lys Ser Glu Pro
 20 25 30
 Val Arg Leu Pro Glu Leu Ser Gly His Arg Gly Ala Asp Cys Ile Ala
 35 40 45
 Pro Glu Asn Thr Leu Ala Ser Ala Asp Ser Cys Ile Lys Tyr Lys Ile
 50 55 60
 Asp Phe Met Glu Cys Asp Ile Cys Ile Ser Lys Asp Ser Val Phe Tyr
 65 70 75 80
 Leu Leu His Asp Ser Thr Leu Asp Arg Thr Thr Asn Gly Thr Gly Leu
 85 90 95
 Ile Arg Glu Trp Leu Ser Ala Asp Ile Asp Thr Leu Asp Ala Gly Ser
 100 105 110
 Trp Phe Gly Glu Lys Phe Ser Gly Gln Cys Val Pro Arg Leu Asp Val
 115 120 125
 Leu Leu Arg Lys Ala Lys Gln Asn Gly Leu Lys Leu Thr Leu Asp Tyr
 130 135 140
 Arg Thr Gly Asp Phe Gly Gln Leu Leu Asp Leu Val Arg Arg Glu Gly
 145 150 155 160
 Met Leu Glu Asn Cys Thr Phe Thr Phe Trp Ser Asp Lys Glu Ala Lys
 165 170 175
 Ala Phe Arg Gln Val Ala Pro Glu Ile Arg Thr Leu Gln Ala Tyr Val
 180 185 190
 Gly Gly Gly Ala Glu Leu Asp Lys Val Ile Ala Glu Ile Asn Pro Asn
 195 200 205
 Ile Ala Val Ile Arg Ile Asp Ser Leu Asp Lys Leu Leu Val Glu Arg
 210 215 220
 Cys His Lys Lys Gly Leu Lys Val Leu Ala Leu Ala Leu Gly Thr Asp
 225 230 235 240
 Asp Val Glu Glu Ser Asp Arg Lys Ala Ile Glu Leu Gly Val Asp Val
 245 250 255
 Leu Ala Thr Asp Arg Pro Glu Leu Phe Val Lys Lys Tyr Arg Pro Glu
 260 265 270
 His Thr Trp Thr Lys
 275

<210> 7881
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7881
 Leu Tyr Ser Gly Lys Leu Asn Asn Ser Ile Leu Tyr Ala Asn Phe Ile
 1 5 10 15

Leu Cys Met Ile Tyr Phe Val Ser Val Leu Gly Asn Cys Ile Val Arg
 20 25 30
 Leu Ile Phe Ser Phe Asp Leu Glu Ala Arg Gly Thr Tyr Gln Asn Asp
 35 40 45
 Asn Tyr Val Phe Glu Glu Gln Met Asp Asp Ile Phe Gln Glu
 50 55 60

<210> 7882
 <211> 798
 <212> PRT
 <213> B.fragilis

<400> 7882

Pro Ser Lys Gly Lys Ala Gly Lys Met Ser Val Asn Tyr Asn Phe Asn
 1 5 10 15
 Tyr Asn Trp Ser Gln Pro Ala Asn Met Pro Asn Lys Leu Asp Ala His
 20 25 30
 Asp Ala Ala Phe Tyr Lys Asn Met Ser Met Thr Asn Asp Gly Leu Ala
 35 40 45
 Pro Ala Tyr Thr Asp Asp Glu Leu Glu Leu Phe Arg Asn Gly Ser Asp
 50 55 60
 Pro Arg Arg Tyr Pro Asn Thr Asp Trp Gln Lys Leu Cys Leu Lys Asn
 65 70 75 80
 Ser Ala Pro Glu Met Gln His Thr Leu Thr Val Thr Gly Gly Ser Glu
 85 90 95
 Lys Ile Lys Ala Tyr Thr Ser Leu Gly Phe Tyr Asp Gln Lys Ser Leu
 100 105 110
 Tyr Lys Phe Asp Val Asn Ser Phe Lys Arg Tyr Asn Phe Arg Thr Asn
 115 120 125
 Ile Val Ala Asp Phe Lys Glu Ile Gly Leu Lys Val Thr Ser Ser Ile
 130 135 140
 Glu Ala Tyr Lys Thr Asp Leu Arg Ser Pro Asn Ala Lys Ser Gly Asp
 145 150 155 160
 Ser Tyr Tyr His Thr Trp Gly His Ile Gln Asn Lys Ala Pro Trp Glu
 165 170 175
 Ile Ala Tyr Asn Pro Asn Gly Gln Ile Phe Asn Thr Pro Asp Asn Pro
 180 185 190
 Leu Met Glu Ile Ser Pro Asp Ala Gly Tyr Thr Lys Asn Glu Asn Leu
 195 200 205
 Ser Ala Ile Ala Asn Leu Ala Leu Glu Trp Ser Val Pro Tyr Val Pro
 210 215 220
 Gly Leu Arg Leu Lys Ala Leu Gly Asn Tyr Arg Ile Asn Asn Asp Lys
 225 230 235 240
 Ser Lys Ser Trp Lys Lys Ser Pro Leu Ala Tyr Asp Trp Asp Gly Asn
 245 250 255
 Pro Asn Asp Pro Gly Lys Pro Ser Leu Ser Lys Ser Tyr Ser Asn Trp
 260 265 270
 Ser Ser Tyr Thr Val Gln Gly Phe Ala Asn Tyr Asp Arg Thr Phe Asn
 275 280 285
 Gln Val His Thr Ile Ser Ala Thr Ala Gly Ile Glu Ala Tyr Lys Leu
 290 295 300
 Phe Lys Asp Asp Ala Ser Leu Ser Arg Glu Glu Tyr Leu Leu Asp Val
 305 310 315 320
 Asp Gln Ile Gly Ala Gly Pro Val Ser Thr Ala Lys Asn Ser Ser Ser
 325 330 335
 Glu Gly Glu Glu Ala Arg Ala Gly Val Val Ala Arg Leu Lys Tyr Asp
 340 345 350
 Tyr Ala Ser Lys Tyr Val Ala Glu Ala Ser Leu Arg Tyr Asp Gly Ser
 355 360 365

Asp Asn Phe Pro Arg Gly Lys Arg Trp Gly Thr Phe Tyr Ala Gly Ser
 370 375 380
 Leu Ala Trp Val Ile Ser Glu Glu Ser Phe Trp Gln Thr Leu Lys Asp
 385 390 395 400
 Arg His Ile Phe Asp Gln Phe Lys Val Arg Ala Ser Tyr Gly Glu Ile
 405 410 415
 Gly Ser Asp Ala Ile Gly Arg Tyr Ala Tyr Leu Gln Ser Tyr Gly Leu
 420 425 430
 Asn Asp Arg Gly Tyr Leu Leu Asn Gly Ser Trp Tyr Pro Gly Phe Ser
 435 440 445
 Glu Gly Ala Leu Val Ser Lys Asp Ile Thr Trp Tyr Thr Thr Arg Asp
 450 455 460
 Phe Asn Ile Gly Phe Asp Phe Gly Ser Leu Asn Asn Arg Leu Ser Gly
 465 470 475 480
 Ser Val Asp Tyr Phe Arg Lys Ser Thr Lys Gly Tyr Leu Thr Ser Pro
 485 490 495
 Ser Ala Val Ala Tyr Thr Asp Pro Leu Gly Ile Ala Leu Pro Lys Val
 500 505 510
 Lys Ser Asn Gly Glu Phe Ile Arg Gln Gly Ala Glu Phe Ile Leu Gln
 515 520 525
 Trp Lys Glu Lys Arg Gly Asp Phe Glu Tyr Thr Leu Ser Gly Asn Phe
 530 535 540
 Thr Tyr Phe Asp Gln Tyr Trp Asn Ile Asn Pro Asn Glu Ala Glu Thr
 545 550 555 560
 Asp Thr Lys Asn Pro Tyr Lys Arg Thr Thr Gln Ala Lys Gly Tyr Trp
 565 570 575
 Gly Ile Gly Tyr Asp Cys Leu Gly Tyr Tyr Gln Asn Gln Glu Asp Ile
 580 585 590
 Met Asn Ser Pro Lys Arg Gln Ser Ser Val Asn Leu Gly Ala Gly Asp
 595 600 605
 Leu Lys Tyr Asn Asp Phe Asn Gly Asp Gly Ile Ile Asp Gly Ser Asp
 610 615 620
 Gln His Arg Ile Gly Lys Asn Ser Met Pro Arg Gly Gln Tyr Gly Phe
 625 630 635 640
 Ser Ala Asp Leu Asn Tyr Lys Gly Trp Phe Met Asn Met Leu Trp Gln
 645 650 655
 Gly Ala Thr Pro Ala Asp Leu Tyr Met Gly Gly Met Ile Gln Gly Ser
 660 665 670
 Gln Ser Gly Ser Gly Tyr Pro Pro Val Ile Tyr Asp Phe Gln Thr Asp
 675 680 685
 Val Trp Thr Pro Asn Asn Thr Gly Ala Arg Tyr Pro Arg Leu Arg Ser
 690 695 700
 Thr Ala Ser Tyr Asn Gly Ser Asn Asn Tyr Gly Ser Ser Asp Phe Trp
 705 710 715 720
 Leu Ile Asn Thr Gly Tyr Leu Arg Leu Lys Thr Leu Ser Ile Gly Tyr
 725 730 735
 Asp Phe Lys His Lys Leu Leu Lys Arg Val Ala Trp Met Asn Lys Cys
 740 745 750
 Asn Val Ser Leu Asn Gly Tyr Asn Leu Leu Thr Phe Ser Lys Ala Asn
 755 760 765
 Lys Phe Asp Ile Asp Pro Glu Ile Gly Asp Gly Asn Leu Tyr Thr Tyr
 770 775 780
 Pro Val Ser Arg Val Tyr Ser Ile Ser Val Asn Val Gly Phe
 785 790 795

<210> 7883

<211> 579

<212> PRT

<213> B.fragilis

<400> 7883

Ser His Phe Leu Phe Cys Cys Lys Met Ile His Gln Lys Lys Phe Val
 1 5 10 15
 Thr Ile Ser Ile Gly Tyr Arg Ile Tyr Lys Met Leu Gly Met Leu Cys
 20 25 30
 Leu Cys Val Leu Val Tyr Ser Cys Gly Ser Lys Ser Pro Leu Thr Met
 35 40 45
 Arg Leu Phe Met Gln Ala Gly Gly Ala Thr Val Glu Leu Pro Asn Thr
 50 55 60
 Ser Ser Ala Asp Ser Val Phe Thr Val Ser Glu Thr Val Gly Phe Arg
 65 70 75 80
 Asp Ser Val Val Val Asp Asn Pro Val Ser Ser Val Asp Ser Leu Glu
 85 90 95
 Glu Asp Ile Trp Lys Ser Ile Asp Met Asp Arg Ile Asp Ile Val Ala
 100 105 110
 Gln Arg Lys Ser Ile Glu Arg Ile Leu Glu Arg Asn Gly Glu Val Thr
 115 120 125
 Leu Met Phe Tyr Val Lys Ala Pro Lys Val Leu Leu Asp Ser Cys Trp
 130 135 140
 Lys Leu Thr Met Tyr Pro Glu Leu Ile Glu Lys Asp Ser Ser Val Leu
 145 150 155 160
 Leu Ser Pro Val Ile Leu Arg Gly Lys Glu Phe Ile Arg Thr Gln Glu
 165 170 175
 Ser Gln Tyr Lys Ala Tyr Asp Asp Phe Leu Lys Gly Ile Ile Pro Glu
 180 185 190
 Ser Lys Tyr Asp Ser Ala Phe Val Asp Arg Glu Gly Ile Arg Lys Asp
 195 200 205
 Ile Phe Ala Arg Gln Arg Leu Phe Trp Lys Val Tyr Glu Ala Glu Arg
 210 215 220
 Arg Arg Arg Leu Ala Tyr Leu Arg Trp Lys Ala Leu Met Asp Lys Arg
 225 230 235 240
 His Gly Trp Ile Ser Thr Lys Ala Glu Gly Asn Arg Asn Thr Leu Lys
 245 250 255
 Gln Arg Met Gln Arg Asn Val Leu Glu Arg Ser Val Glu Lys Phe Ile
 260 265 270
 Ala Gly Tyr Asp Thr Val Gly Ile Arg Ala Ser Tyr Gln Lys Lys Tyr
 275 280 285
 Asp Arg Arg Thr Asp Phe Trp Pro Ala Tyr Arg Leu Pro Arg Ala Met
 290 295 300
 Thr Val Lys Asp Val Pro Ser Arg Phe Gln Glu Leu Tyr Leu Ser Gly
 305 310 315 320
 Gly Arg Leu Glu Asp Ile Arg Asn Tyr Ser Phe Thr Arg Arg Asp Ser
 325 330 335
 Ile Glu Ile Ala Ser His Arg Tyr Phe Arg Lys Ala Ile Ala Glu Asn
 340 345 350
 Glu Tyr Asn Arg Asp His Gln Asp Leu Ile Arg Asp Arg Ile Ile Arg
 355 360 365
 Phe Pro Tyr Ala Asp Ser Ala Met Val Asn Gln Thr Ala Asp Pro Ser
 370 375 380
 Glu Asp Phe Ser Tyr Leu Tyr Met Tyr Arg Ile Pro Val Arg Glu Gly
 385 390 395 400
 Met Lys Lys Leu Tyr Ile Thr Leu Arg Gly Asn Val Leu Ala Thr Asp
 405 410 415
 His Ser Val Trp Ser Leu Pro Pro Ala Asp Thr Leu Thr Phe Val Ile
 420 425 430
 Ala Ser Val Ala Asp Leu Ala Asp Ala Thr Leu Ala Arg Arg Phe Asp
 435 440 445
 Ile Ala Gly Asp Ser Val Asn His Leu Thr Pro Glu Arg Glu Glu Tyr

450 455 460
 Ala Gln Gly Leu Glu Ala Leu Ser Asn Arg Glu Tyr Gln Arg Ala Leu
 465 470 475 480
 Gly Ile Leu Glu Lys Tyr Pro Asp Tyr Asn Thr Ala Val Ala Leu Thr
 485 490 495
 Cys Leu Gly Tyr His Ala Lys Ser Glu Asp Leu Leu Lys Gln Leu Pro
 500 505 510
 Gln Thr Ala Ala Val Glu Tyr Leu Arg Ala Ile Val Asn Val Arg Leu
 515 520 525
 Glu Asp Tyr Gln Ala Ala Ala Glu Leu Leu Leu Glu Ala Cys Arg Lys
 530 535 540
 Asp Thr Lys Tyr Val Tyr Arg Thr Glu Met Asp Ser Asp Ile Ala Ala
 545 550 555 560
 Leu Leu Pro Arg Phe Met Gly Leu Lys Glu Glu Leu Glu Arg Ile Ala
 565 570 575
 Ser Glu Glu

<210> 7884
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 7884
 Ile Ile Val Met Ala Phe Lys Arg Ser Val Phe Leu Phe Leu Leu Val
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 Val Ser Ser Thr Phe Leu Gly Val Glu Ile Ala Arg Gly Gln Val Tyr
 20 25 30
 Ser Leu Gln Thr Asn Val Leu Gly Trp Gly Thr Thr Asn Met Asn Leu
 35 40 45
 Glu Phe Gly Leu Lys Phe Ser His Arg Trp Thr Phe His Phe Pro Leu
 50 55 60
 Gln Tyr Asn Pro Phe Ser Phe Gly Asp Ala Arg Leu Arg Asn Leu Ser
 65 70 75 80
 Ala Ser Pro Gly Val Arg Tyr Trp Ile Arg Glu Ser Tyr Gly Arg Ser
 85 90 95
 Tyr Phe Leu Gly Ile His Gly Val Ser Thr Met Tyr Asn Val Gly Gly
 100 105 110
 Val Phe Gly Asp Lys Tyr Arg Tyr Glu Gly Tyr Gly Phe Gly Gly Gly
 115 120 125
 Leu Ser Leu Gly Tyr Asn Arg Pro Leu Ser Pro His Trp Asn Leu Glu
 130 135 140
 Phe Glu Ala Gly Leu Gly Val Leu Trp Thr His Tyr Asp Lys Tyr Val
 145 150 155 160
 Cys Lys Ala Cys Gly Gln Lys Val Ala Thr Phe Lys Gly Ala Arg Leu
 165 170 175
 Ile Pro Thr Lys Leu Ala Val Asn Ile Val Tyr Leu Phe
 180 185

<210> 7885
 <211> 392
 <212> PRT
 <213> B.fragilis

<400> 7885
 Leu His Lys Met Ser Leu Leu Lys Lys Lys Tyr Met Arg Cys Val Lys
 1 5 10 15
 Gly Ile Tyr Ile Phe Phe Leu Leu Leu Ser Phe Ile Ser Cys Glu Leu
 20 25 30

Glu Asp Lys Ile Gly Arg Tyr Thr Ser Gly Asp Asn Pro Val Glu Val
 35 40 45
 Glu Leu Met Thr Arg Asn Val Thr Leu Gly Gly Ser Glu Ser Gly Val
 50 55 60
 Thr Leu Lys Arg Leu Arg Val Ile Ala Val Ala Lys Asn Ser Gly Lys
 65 70 75 80
 Val Glu Met Asn Arg Ala Asp Leu Ser Asp Pro Ser Ser Ser Gly
 85 90 95
 Leu Glu His Thr Gly Gly Val Phe Lys Leu Tyr Leu Arg Pro Gly Asp
 100 105 110
 Tyr Asp Leu Phe Val Ile Gly Asn Glu Thr Thr Gly Met Asn Ser Ala
 115 120 125
 Leu Thr Gly Glu Pro Ser Leu Ser Glu Ile Lys Ser Val Pro Val Thr
 130 135 140
 Leu Pro Val Asp Thr Ala Glu Phe Val Val Cys Lys His Leu Asp Ile
 145 150 155 160
 Arg Ile Arg Asn Ala Ala Ser Ser Thr Pro Val Thr Gly Glu Val Ser
 165 170 175
 Val Asp Glu Gly Leu Thr Trp Asn Ser Ala Phe Ser Val Glu Leu Glu
 180 185 190
 Arg Ile Ala Ser Lys Ala Ser Leu Glu Ile Arg Lys Asn Thr Asp Glu
 195 200 205
 Asp Ile Lys Ile Arg Gln Val Thr Val Lys Gln Leu Pro Ser Phe Ser
 210 215 220
 Phe Leu Ser Pro Ser Ala Tyr Pro Leu Ser Gly Gly Leu Thr Val Thr
 225 230 235 240
 Asp Thr Arg Ser Phe Ser Thr Pro Val Ser Ile Ala Gly Glu Lys Asp
 245 250 255
 Val Pro Ser Gly Tyr Pro Tyr Thr Ser Val Val Gln Gly Lys Asn Ser
 260 265 270
 Phe Ile Leu Pro Glu Tyr Ile Trp Asp Asn Thr Ala Gly Lys Gly Arg
 275 280 285
 Ala Ser Phe Met Glu Ile Glu Ala Glu Arg Asn Gly Ala Ser Glu Thr
 290 295 300
 Trp Gln Ile Leu Leu Gly Lys Ser Thr Asp Ile Pro Ala Asp Tyr Ser
 305 310 315 320
 Leu Gly Arg Asn Thr Tyr Tyr Arg Tyr Met Leu Thr Val Asn Pro Leu
 325 330 335
 Asn Val Asp Val Asn Val Ser Val Glu Pro Trp Gln Asn Thr Thr Ala
 340 345 350
 Tyr Asp Thr Ile Pro Gly Ala Lys Ile Val Phe Ser Arg Val Asn Val
 355 360 365
 Gly Tyr Ser Tyr Ala Ser Glu Ser Val Val Thr Phe Thr Thr Lys Asn
 370 375 380
 Leu Pro Pro Val Ser Val Ser Leu
 385 390

<210> 7886

<211> 90

<212> PRT

<213> B.fragilis

<400> 7886

Tyr Met Ile Phe Val Gly Lys Lys Asn Ser Thr Ser Phe Phe Leu Leu
 1 5 10 15
 Ile Ser Leu Ile Leu Gly Leu Ala Leu Tyr Thr Ala Leu Phe Ser Ser
 20 25 30
 Cys Val Tyr Glu Asp Leu Ser Lys Cys Ser Arg Met Phe Met Leu Gln
 35 40 45

Pro Arg Tyr Leu Leu His Thr Gly Glu Gly Asp Arg Phe Gly Glu Ala
 50 55 60
 Val His His Ile Asp Val Tyr Ala Phe Asp Ser Leu Gly Ile Tyr Arg
 65 70 75 80
 Gln Lys Cys Phe Gly Thr Lys Glu His Ile
 85 90

<210> 7887
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7887
 Ser Gly Tyr Ser Gly Ile Tyr Arg Ile Glu Thr Met Arg Phe Pro Ser
 1 5 10 15
 Leu Ile Ile Glu Lys Ala Ser Tyr Ser Phe Ala His Ile Ile Gly Gly
 20 25 30
 Leu Val Val Phe Ile Lys Thr Glu Cys Gly Val Ile Leu Asp Phe Asp
 35 40 45
 Ser Thr Pro Phe Leu Gln Asp Ala Ile Met Gln Asn Arg Ile Phe Pro
 50 55 60
 Pro Arg
 65

<210> 7888
 <211> 443
 <212> PRT
 <213> B.fragilis

<400> 7888
 Ser Leu Val Lys Pro Ile Asp Ser Met Ile Lys Leu Tyr Phe Lys Gln
 1 5 10 15
 Ala Trp Gln Leu Leu Lys Gln Asn Pro Leu Phe Ser Ser Val Tyr Val
 20 25 30
 Leu Gly Thr Gly Leu Gly Ile Ala Met Thr Met Ser Leu Val Ile Ile
 35 40 45
 Tyr Tyr Ile Lys Met Ala Pro Val Tyr Pro Glu Glu Asn Arg Asn Arg
 50 55 60
 Ile Leu Val Ser Lys Gly Met Thr Ala Ile Glu Gln Gly Asn Glu Asn
 65 70 75 80
 Asn Trp Phe Ser Ser Asn Val Ser Phe Gln Thr Val Lys Arg Phe Tyr
 85 90 95
 Tyr Pro Leu Lys Ser Ala Glu Ala Val Gly Cys Ser Leu Asp Gly His
 100 105 110
 Thr Thr Ser Leu Leu Glu Leu Ser Glu Ser Lys Asp Leu Lys Glu Val
 115 120 125
 Gln Val Lys Leu Val Asp Ala Gly Phe Trp Lys Val Phe Ser Phe Ala
 130 135 140
 Phe Val Asp Gly Lys Pro Phe Thr Arg Ala Asp Phe Asp Ser Gly Leu
 145 150 155 160
 Arg Lys Ala Val Ile Ser Val Thr Leu Ala Arg Arg Leu Tyr Gly Asp
 165 170 175
 Asn Ala Pro Val Gly Arg Thr Phe Val Leu Asp Ser Asp Glu Tyr Gln
 180 185 190
 Val Cys Gly Val Val Lys Asp Val Ser Phe Ile Thr Pro Ala Thr Tyr
 195 200 205
 Ala Asp Ile Trp Leu Pro Leu Thr Val Asp Ala Glu Val Val Glu Glu
 210 215 220
 Lys Glu Gly Ser Tyr Glu Leu Ile Gly Asn Leu Ser Val Tyr Met Leu

225 230 235 240
 Ala Pro Ser Val Gly Ser Lys Asp Lys Val Ala Gly Glu Val Arg Asp
 245 250 255
 Ala Phe Arg Lys Tyr Asn Phe Ser Gln Lys Lys Tyr Lys Val Asp Leu
 260 265 270
 Tyr Gly Gln Pro Val Ser Tyr Trp Lys Ser Thr Phe Tyr Glu Tyr Cys
 275 280 285
 Asn Ser Ala Pro Asp Trp Gly Lys Leu Ile Arg Thr Tyr Gly Thr Ile
 290 295 300
 Leu Leu Ala Leu Leu Phe Val Pro Ala Leu Asn Leu Ala Gly Met Ile
 305 310 315 320
 Ala Ser Arg Met Lys Arg Gln Leu Ser Glu Met Gly Ile Arg Lys Ala
 325 330 335
 Phe Gly Ala Ser Lys Ala Ser Leu Leu Met Gln Val Phe Trp Glu Asn
 340 345 350
 Leu Phe Leu Thr Gly Leu Gly Gly Leu Leu Gly Leu Leu Leu Ser Tyr
 355 360 365
 Leu Ile Val Tyr Cys Gly Arg Asn Trp Leu Pro Asp Leu Leu Ser Ala
 370 375 380
 Tyr Ser Asp Val Ile Pro Glu Gly Val Asp Ser Phe Leu Thr Pro Gly
 385 390 395 400
 Met Leu Leu Asn Pro Val Val Ile Gly Ile Thr Phe Leu Val Ser Leu
 405 410 415
 Ile Leu Asn Val Leu Ser Ala Leu Ile Pro Ala Leu His Ala Leu Lys
 420 425 430
 Lys Asp Ile Val Tyr Ser Leu Asn Asp Lys Arg
 435 440

<210> 7889

<211> 425

<212> PRT

<213> B.fragilis

<400> 7889

Ile Ala Met Asn Leu Met Met Ile Leu Arg Gln Leu Trp Asn Gln Arg
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 Ala Ala Asn Gly Trp Ile Leu Gly Glu Leu Val Val Val Thr Tyr Phe
 20 25 30
 Leu Trp Gly Val Val Asp Pro Val Tyr Val Leu Leu Ser Asp Lys Ala
 35 40 45
 Leu Pro Asp Asn Tyr Asp Leu Thr Asp Thr Tyr Leu Leu Ser Ile Gly
 50 55 60
 Ala Tyr Ser Ala Asn His Thr Arg Tyr Asn Pro Glu Leu Asp Ser Asp
 65 70 75 80
 Ser Leu Lys Gln Val Asp Phe Met Arg Ile Val Asp Gln Val Arg Arg
 85 90 95
 Tyr Pro Gly Val Ser Asp Val Thr Val Ser Phe Phe Asn Ser Tyr Pro
 100 105 110
 Gln Ser Gly Thr Trp Asn Gly Gly Gln Leu Phe Asn Asp Thr Ile Phe
 115 120 125
 Ala Asn Ile Gln Gln Met Thr Phe Leu Ser Gly Thr Asp Tyr Phe Gly
 130 135 140
 Val Phe Arg Ile His Asp Ala Arg Thr Gly Glu Ile Pro Pro Val Leu
 145 150 155 160
 Ala Glu Gly Glu Gln Gly Ile Tyr Leu Thr Pro Asp Val Ala Glu Lys
 165 170 175
 Leu Phe Gly Glu Lys Tyr Pro Gln Asn Lys Trp Ile His Trp Gly Asp
 180 185 190
 Ser Thr Arg Lys Ser Pro Leu Thr Ala Val Ile Asp Pro Leu Gln Ile

1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399</
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<400> 7890

<400> 7891

Thr Thr Arg Cys Pro Met Glu Glu Val Ile Lys Leu Asn Ser Val Asp
 1 5 10 15
 Gln Tyr Asn Lys Met Tyr Gly Leu Glu Thr Leu His Pro Leu Val Thr
 20 25 30
 Val Val Asp Leu Ser Lys Ala Thr Val Phe Pro Thr His Phe Thr Leu
 35 40 45
 Asn Tyr Gly Leu Tyr Ala Leu Phe Leu Lys Gln Thr Lys Cys Gly Asp
 50 55 60
 Leu Arg Tyr Gly Arg Gln Met Tyr Asp Tyr Gln Glu Gly Thr Val Thr
 65 70 75 80
 Ser Phe Ala Pro Gly Gln Val Val Glu Val Lys Leu Asn Asp Gly Val
 85 90 95
 Arg Pro Met Ser His Gly Ile Leu Phe His Pro Asp Leu Ile Arg Gly
 100 105 110
 Thr Ser Leu Gly Gln Glu Ile Lys His Tyr Ser Phe Phe Ser Tyr Ala
 115 120 125
 Ser Asn Glu Ala Leu His Leu Ser Asp Asp Glu Lys Lys Ile Phe Gln
 130 135 140
 Asp Cys Leu Asp Lys Val Gln Gln Glu Leu Ser Arg Pro Ile Asp Lys
 145 150 155 160
 His Ser Lys Arg Leu Ile Ala Arg Asn Ile Glu Leu Leu Leu Asp Tyr
 165 170 175
 Cys Met Arg Phe Tyr Glu Arg Gln Phe Val Thr Arg Ser Lys Val Asn
 180 185 190
 Lys Asp Val Leu Met Lys Phe Glu Asp Leu Leu Asp Val Tyr Phe Gln
 195 200 205
 Ser Glu Gln Ser Pro Asn Glu Lys Leu Pro Thr Val Lys Tyr Phe Ala
 210 215 220
 Asp Lys Val Asn Leu Ser Ser Asn Tyr Phe Gly Asp Leu Ile Lys Lys
 225 230 235 240
 Glu Thr Gly Lys Thr Ala Gln Glu Tyr Ile Gln Gly Lys Ile Ile Asn
 245 250 255
 Ile Ala Lys Glu Arg Ile Leu Ala Ser Glu Lys Thr Val Ser Glu Ile
 260 265 270
 Ala Tyr Glu Leu Gly Phe Gln Tyr Pro Gln His Phe Thr Arg Ile Phe
 275 280 285
 Lys Lys Val Val Gly Cys Thr Pro Thr Glu Tyr Arg Val Ile Gln Val
 290 295 300

<210> 7892

<211> 429

<212> PRT

<213> B.fragilis

<400> 7892

Asn Met Ile Arg Leu Ile Met Lys Asn Leu Trp Ala Arg Arg Arg Lys
 1 5 10 15
 Asn Gly Trp Leu Leu Ala Glu Leu Ile Leu Val Ser Ile Val Thr Trp
 20 25 30
 Val Ile Val Asp Pro Leu Val Val Leu Thr His Asp Arg Asn Leu Pro
 35 40 45
 Glu Gly Tyr Arg Pro Asp His Leu Phe Leu Leu Gln Leu Ala Ser Tyr
 50 55 60
 Pro Ala Gly Ser Glu Gln Phe Arg Ala Glu Glu Asn Asp Thr Leu Ala
 65 70 75 80
 Arg Lys Ala Asn Phe Glu Arg Leu Leu Asn Lys Leu Lys His Tyr Glu
 85 90 95
 Gly Val Lys Tyr Thr Thr Phe Ile Leu Asn Glu Gln Tyr Pro Ser Ala
 100 105 110

Leu Ser Ile Ser Asn Gly Asn Thr Met Phe Asp Thr Ile Pro Val Arg
 115 120 125
 Thr Leu Arg Leu Ala Phe Ile Pro His Thr Asp Tyr Phe Arg Thr Met
 130 135 140
 Gly Met Glu Gly Ala Glu Gly Met Thr Ala Glu Gln Leu Asp Asn Arg
 145 150 155 160
 Asp Phe Leu Trp Thr Glu Ser Val Leu Thr Ala Asp Ile Ser Gln Arg
 165 170 175
 Leu Lys Asp Gly Lys Pro Leu Tyr Gly Arg Arg Leu Gly Asn Gly Asp
 180 185 190
 Glu Glu Asp Tyr Arg Val Gly Gly Val Ile Ala Pro Val Arg Tyr Arg
 195 200 205
 Ser Tyr Met Gln Pro Met Pro Ile Glu Leu Tyr Val Tyr Glu Glu Phe
 210 215 220
 Pro Asp Tyr Met Tyr Tyr Tyr Ile Pro Leu Ile Ala Leu Arg Ile Asp
 225 230 235 240
 Asp His Leu Ser Glu Lys Phe Phe Leu His His Phe Arg Glu Trp Met
 245 250 255
 Asn Lys Glu Leu Thr Val Gly Asn Tyr Tyr Val Lys Ser Val Gln Ser
 260 265 270
 Phe Ser Asp Ile Gln Glu Gln His Glu Phe Ser Glu Gly Ile Thr Asn
 275 280 285
 Gln Tyr Arg Leu Asn Leu Ala Leu Gly Ile Phe Phe Leu Val Asn Leu
 290 295 300
 Cys Leu Gly Val Ala Gly Thr Phe Trp Met Gln Thr Arg Ser Arg Arg
 305 310 315 320
 Glu Glu Val Gly Ile Met Leu Ser Phe Gly Gly Thr Pro Ser His Ile
 325 330 335
 Thr Arg Leu Leu Leu Tyr Glu Gly Trp Ile Leu Thr Thr Leu Gly Thr
 340 345 350
 Leu Thr Gly Cys Leu Leu Tyr Leu Gln Tyr Ala Leu Arg Asp Gly Leu
 355 360 365
 Tyr Thr Thr Cys Asn Ser Ala Glu Glu Ala Met Pro Ala Tyr Trp Ile
 370 375 380
 Asn His Phe Gly Leu His Phe Thr Ala Val Thr Leu Ile Val Tyr Leu
 385 390 395 400
 Leu Leu Leu Ile Val Val Ser Ile Gly Ile Trp Met Pro Ala His Lys
 405 410 415
 Leu Ser Arg Ile Ser Pro Val Asp Ala Leu Arg Asp Glu
 420 425

<210> 7893

<211> 427

<212> PRT

<213> B.fragilis

<400> 7893

Lys Glu Leu Met Ile Lys Gln Tyr Phe Lys Gln Ser Leu Val Leu Leu
 1 5 10 15
 Gln Gln Asn Lys Leu Leu Ser Val Ile Ala Ile Ile Gly Thr Ala Leu
 20 25 30
 Ala Ile Ala Met Ile Met Cys Ile Val Leu Ile Tyr Gln Ala Arg Thr
 35 40 45
 Ala Asn Tyr Glu Pro Glu Ile Asn Arg Asp Arg Thr Leu Ser Ile Glu
 50 55 60
 Met Thr Ile Ala Gln Lys Ile Asp Asp Lys Gly Trp Asn Met Gly Asn
 65 70 75 80
 Gln Leu Ser Leu Arg Thr Ile Lys Glu Cys Phe Tyr Pro Met Thr Thr
 85 90 95

Ala Glu Ala Val Ser Ala Val His Tyr Ser Met Thr Ser Leu Ala Ala
 100 105 110
 Thr Pro Asp Gly Thr Arg Glu Val Lys Cys Ala Val Ser Tyr Thr Asp
 115 120 125
 Asp Asn Phe Trp Arg Val Phe Gly Phe Arg Phe Leu His Gly Lys Pro
 130 135 140
 Tyr Gly Gln Glu Phe Val Ser Gly Glu Lys Lys Leu Val Val Thr Arg
 145 150 155 160
 Ser Leu Ala Arg Arg Leu Phe Gly Ile Asp Asn Ala Val Gly Arg Ile
 165 170 175
 Ile Ser Leu Gly Phe Val Asp Tyr Thr Val Cys Gly Val Val Ala Asp
 180 185 190
 Val Ser Val Leu Ala Glu Ala Ala Tyr Ala Glu Ala Trp Ala Pro Tyr
 195 200 205
 Thr Ala Leu Pro Asp Tyr Glu Arg Ser Val Ser Glu Gly Leu Gln Gly
 210 215 220
 Gly Tyr Ser Cys Tyr Ile Leu Val Pro Lys Gly Ala Asp Pro Asp Val
 225 230 235 240
 Val Arg Thr Glu Ala Gln Gln Asn Val Asp Arg Met Asn Ala Asn Gln
 245 250 255
 Lys Glu Leu Lys Leu Leu Leu Gly Gly Ala Pro Asp Thr Arg Leu Met
 260 265 270
 Ser Leu Ala Arg Asp Asn Pro Phe Asp Asp Pro Asp Thr Ser Arg Leu
 275 280 285
 Val Leu Ile Tyr Ile Val Val Ile Thr Ile Leu Leu Val Pro Ala
 290 295 300
 Ile Asn Leu Ser Gly Ile Thr Leu Ser Arg Met Arg Arg Arg Met Glu
 305 310 315 320
 Glu Ile Gly Val Arg Arg Ala Phe Gly Ala Thr Arg Gly Glu Leu Leu
 325 330 335
 Arg Gln Val Leu Ala Glu Asn Leu Val Val Thr Leu Met Gly Gly Val
 340 345 350
 Leu Gly Leu Ile Leu Ser Tyr Ile Ala Val Leu Cys Met Arg Asp Trp
 355 360 365
 Leu Leu Asn Thr Ser Met Ser Gly Tyr Tyr Gly Val Asp Thr Gln Val
 370 375 380
 Ser Ala Gly Met Val Ile Gln Pro Phe Val Phe Val Cys Ala Leu Leu
 385 390 395 400
 Phe Cys Leu Leu Met Asn Leu Leu Ser Ala Gly Ile Pro Ala Ile Arg
 405 410 415
 Val Ser Arg Thr Asn Ile Val Asn Ala Ile Lys
 420 425

<210> 7894

<211> 224

<212> PRT

<213> B.fragilis

<400> 7894

Thr Lys Val Met Ile Thr Leu Thr Ser Leu Ser Lys Ile Tyr Arg Thr
 1 5 10 15
 Asn Glu Ile Glu Thr Val Ala Leu Glu Asn Val Asn Leu Lys Val Asp
 20 25 30
 Arg Gly Glu Phe Leu Ser Ile Met Gly Pro Ser Gly Cys Gly Lys Ser
 35 40 45
 Thr Leu Leu Asn Ile Met Gly Leu Leu Asp Ala Pro Thr Ala Gly Thr
 50 55 60
 Ile Glu Ile Asn Gly Thr His Thr Glu Gly Met Lys Asp Lys Glu Leu
 65 70 75 80

Ala Ala Phe Arg Asn Lys Thr Leu Gly Phe Val Phe Gln Ser Phe His
85 90 95
Leu Ile Asn Ser Leu Asn Val Met Asp Asn Val Glu Leu Pro Leu Leu
100 105 110
Tyr Arg His Ile Ala Ser Ser Glu Arg Arg Lys Leu Ala Gln Glu Val
115 120 125
Leu Glu Lys Val Gly Leu Ser His Arg Met Arg His Phe Pro Thr Gln
130 135 140
Leu Ser Gly Gly Gln Cys Gln Arg Val Ala Ile Ala Arg Ala Ile Ile
145 150 155 160
Gly Asn Pro Glu Ile Ile Leu Ala Asp Glu Pro Thr Gly Asn Leu Asp
165 170 175
Ser Lys Met Gly Ala Glu Val Met Glu Leu Leu His Arg Leu Asn Lys
180 185 190
Glu Asp Gly Arg Thr Ile Val Met Val Thr His Asn Glu Glu Gln Ala
195 200 205
Gly Gln Thr Ser Arg Thr Val Arg Phe Phe Asp Gly Arg Gln Val Gln
210 215 220

<210> 7895

<211> 401

<212> PRT

<213> B.fragilis

<400> 7895

Ile Glu Glu Ile Met Ile Lys His Leu Leu Lys Gln Ile Trp Ala Gln
1 5 10 15
Arg Ser Val Asn Ala Trp Leu Trp Phe Glu Leu Met Ile Val Ser Val
20 25 30
Cys Leu Phe Tyr Val Met Asp Tyr Leu Tyr Val Pro Gly Arg Leu Tyr
35 40 45
Ala Pro Pro Leu Gly Phe Asp Thr Glu His Val Tyr Arg Val Lys Leu
50 55 60
Ala Ser Ile Pro Pro Gly Lys Glu Tyr Lys Pro Gly Asp Thr Asp
65 70 75 80
Ser Leu Lys Ile Glu Gln Trp Phe Ser Ile Leu Ser Arg Leu Arg Ala
85 90 95
Tyr Pro Gly Val Glu Ala Val Ser Leu Ser Ile Gly Ser His Pro Tyr
100 105 110
Asn Gln Asn Ser Ser Ser Gly Ser Arg Gly Ile Asp Thr Thr Trp Val
115 120 125
His Gly Tyr Val Tyr Asn Val Ser Pro Asp Tyr Phe Arg Val Phe Arg
130 135 140
Ile Thr Asp Lys Gln Gly Lys Thr Glu Ser Leu Val Gln Ala Ala Asn
145 150 155 160
Gln Glu Asn Thr Trp Ile Ile Ser Ala Glu Thr Glu Arg Glu Phe Ser
165 170 175
Ala Lys Gly Thr Asp Ala Leu Gly Lys Gly Val Lys Asn Trp Gly Glu
180 185 190
Thr Glu Pro Thr His Thr Ile Arg Gly Ile Cys Asn Thr Ile Arg Phe
195 200 205
Asp Asp Phe Tyr Pro Leu Tyr Pro Thr Tyr Ile Glu Cys His Ser Glu
210 215 220
Ala Ala Leu Leu Gly Arg Arg Gly Asn Asn Ala Glu Phe Cys Val Arg
225 230 235 240
Val Arg Pro Asp Ala Asp Gly Val Asp Phe Pro Ser Arg Phe Arg Lys
245 250 255
Asp Met Lys Val Gln Leu Arg Val Gly Asn Phe Tyr Leu Leu Asp Ile
260 265 270

Thr Ser Phe Asp Asp Leu Leu Glu Asn Tyr Tyr Arg Ser Asn Gly Lys
 275 280 285
 Ile Asn Asp Val Lys Thr Arg Ile Ala Ala Leu Gly Phe Phe Leu Leu
 290 295 300
 Asn Ile Leu Met Gly Val Ile Gly Thr Phe Trp Ile Arg Thr Gln Gln
 305 310 315 320
 Arg Arg Ser Glu Met Gly Leu Arg Leu Ala Leu Gly Ser Thr Arg Ala
 325 330 335
 Asn Leu Arg Ser Leu Leu Ile Gly Glu Gly Val Leu Leu Leu Ile Leu
 340 345 350
 Ala Thr Val Pro Ala Ala Val Ile Ser Leu Asn Leu Ala Phe Met Asp
 355 360 365
 Leu Leu Thr Asp Thr Met Pro Val Val Thr Val Thr Arg Phe Leu Ile
 370 375 380
 Val Gln Ala Met Thr Phe Val Ser Ile Val Val Met Ile Val Ile Gly
 385 390 395 400
 Ile

<210> 7896
 <211> 215
 <212> PRT
 <213> B.fragilis

<400> 7896

Ser His Lys Val Gly Thr Tyr Val Val Tyr Phe Lys Val Arg Gln Lys
 1 5 10 15
 Glu Asp Met Pro Lys Leu Tyr Ala Glu Val Asn Glu Leu Val Arg Lys
 20 25 30
 Tyr Asn Thr Ser Gln Lys Glu Tyr Thr Val Asp Ile Phe His Gln Pro
 35 40 45
 Asp Pro Tyr Trp Gln Thr Trp Phe Arg Glu Gly Asn Thr Asn Glu Ile
 50 55 60
 Asp Trp Ala Ser Val Ile Lys Leu Tyr Gly Gly Ala Leu Leu Ala Leu
 65 70 75 80
 Leu Leu Val Pro Ala Ile Asn Leu Ser Gly Met Ile Ser Ser Arg Met
 85 90 95
 Asp Asp Arg Leu Ala Glu Met Gly Ile Arg Lys Ala Phe Gly Ala Asn
 100 105 110
 Arg Lys Gln Leu Leu Asn Gln Val Leu Trp Glu Asn Leu Leu Thr
 115 120 125
 Cys Ile Gly Gly Leu Met Gly Leu Ile Val Ser Trp Gly Leu Leu Val
 130 135 140
 Leu Gly Arg Asn Trp Val Phe Ser Leu Phe Asp Lys Tyr Pro Thr Val
 145 150 155 160
 Ile Ser Asp Gly Val Asp Val Ala Ile Asn Pro Gln Met Leu Phe Ser
 165 170 175
 Pro Leu Met Phe Cys Val Thr Phe Ala Phe Cys Leu Ile Leu Asn Leu
 180 185 190
 Leu Ser Ala Trp Trp Pro Thr Trp Arg Ser Leu His Lys Asp Ile Ile
 195 200 205
 Asp Ser Leu Asn Glu Lys Lys
 210 215

<210> 7897
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 7897

Cys Lys Ala Ser Lys Gln Lys Asp Lys Lys Phe Phe Ser Gly Lys Arg
 1 5 10 15
 Cys Ser Leu Leu Ile Leu Asn Asn Ala His Leu Tyr Ile Met Asn Gly
 20 25 30
 Ile Lys Val Gly Tyr Ser Ser His Gly Thr Trp Lys Lys Val Ile Asn
 35 40 45
 Arg Leu Leu Tyr Asn Phe Glu Pro Ser Asp Ser Ser Phe Phe Phe Ile
 50 55 60
 Ile Ser Pro Val Arg Val Val Val Leu Val Arg Glu Ala Asp Tyr Val
 65 70 75 80
 Lys

<210> 7898

<211> 133

<212> PRT

<213> B.fragilis

<400> 7898

Ser Phe His Ser Ile Met Lys Asn Thr Phe Cys Val Leu Ala Cys Phe
 1 5 10 15
 Phe Ile Thr Ile Phe Cys Gln Ala Gln Ser Val Glu Glu His Tyr Tyr
 20 25 30
 Phe Lys Asn Leu Ser Ile Arg Asn Gly Leu Ser Gln Asn Thr Val Asn
 35 40 45
 Ala Ile Leu Gln Asp Arg Lys Gly Phe Met Trp Leu Gly Thr Lys Asp
 50 55 60
 Gly Leu Asn Arg Tyr Asp Gly Leu Ser Phe Arg Lys Phe Lys His Asp
 65 70 75 80
 Ala Ala Asn Pro Arg Ser Ile Gly Thr Val Leu Ser Leu Arg Phe Thr
 85 90 95
 Lys Ile Ser Met Val Asn Ile Trp Ser Val Leu Met Gln Glu Tyr Ile
 100 105 110
 Phe Thr Ile Leu Arg Arg Arg Leu Leu Arg Asn Ser Ile Ala Arg Ala
 115 120 125
 Trp Arg Arg Gln Gly
 130

<210> 7899

<211> 127

<212> PRT

<213> B.fragilis

<400> 7899

Glu Ala Arg Phe Ile Ile Ser Leu Leu Met Trp Lys Glu Leu Leu Arg
 1 5 10 15
 Ile Val Lys His Lys Ile Asn His Ser Asn Lys Pro Arg Leu Met Lys
 20 25 30
 Arg Thr Lys Glu Asn Tyr Pro Ser Phe Asn Leu Phe Ser Ile Val Gly
 35 40 45
 Thr Trp Glu Ser Ile Asn Leu Asn Pro Thr Val Ile Ile Tyr Arg Asn
 50 55 60
 Asp Asn Asp Tyr Leu Leu Ser Ile Ile Tyr Val Ser Glu Thr Thr Lys
 65 70 75 80
 Gln Ala Ser Pro Ala Thr Tyr Glu Ile Gln Lys Glu Gly Ser Leu Tyr
 85 90 95
 Phe Ile Ala Pro Ala Pro Lys Arg Val Tyr Ile Asp Tyr Asp Pro Val
 100 105 110

Lys Asp Val Leu Asn Leu Ser Ser Leu Gly Asp Tyr Leu Arg Asn
 115 120 125

<210> 7900

<211> 107

<212> PRT

<213> B.fragilis

<400> 7900

Ser Asp Met Ser Thr Ile Glu Leu Thr Glu Trp Glu Leu Ala Ile Arg
 1 5 10 15
 Glu Gln Leu Ile Lys Ala Ala Ser Glu Gly Lys Thr Leu Tyr Tyr Ser
 20 25 30
 Asp Leu Val Lys Glu Lys Asp Val Ser Leu Val Arg Ser Leu Gly Thr
 35 40 45
 Val Leu Glu Arg Ile Thr Arg Tyr Asp Ile Glu Asn Lys Gln Pro Ile
 50 55 60
 Leu Ala Ser Ile Ala Val Leu Asn Ser Thr Gly Leu Pro Ser Glu Gly
 65 70 75 80
 Phe Phe Glu Leu Cys Asp Thr Leu Asp Ile Ser Ala Arg Leu Ser Asp
 85 90 95
 Leu Gln Gln Ser Cys Phe Glu Tyr Trp Lys Gln
 100 105

<210> 7901

<211> 203

<212> PRT

<213> B.fragilis

<400> 7901

Asn Ile Gln Ser Pro Thr Lys Lys Tyr Met Asp Lys Phe Ser Tyr Ala
 1 5 10 15
 Ile Gly Leu Gly Ile Gly Gln Asn Leu Leu Gly Met Gly Ala Lys Gly
 20 25 30
 Ile Ala Val Asp Asp Phe Ala Gln Ala Ile Lys Asp Val Leu Glu Gly
 35 40 45
 Asn Gln Thr Ala Ile Ser His Gln Glu Ala Arg Glu Ile Val Asn Lys
 50 55 60
 Tyr Phe Glu Glu Leu Glu Thr Lys Met Asn Ala Ala Asn Ile Glu Gln
 65 70 75 80
 Gly Lys Ala Phe Leu Glu Glu Asn Lys Lys Arg Pro Asn Val Val Thr
 85 90 95
 Leu Pro Ser Gly Leu Gln Tyr Glu Val Ile Thr Glu Gly Thr Gly Lys
 100 105 110
 Lys Ala Gln Ala Thr Asp Gln Val Lys Cys His Tyr Glu Gly Thr Leu
 115 120 125
 Ile Asp Gly Thr Leu Phe Asp Ser Ser Ile Lys Arg Gly Gln Pro Ala
 130 135 140
 Val Phe Gly Val Asn Gln Val Ile Pro Gly Trp Val Glu Ala Leu Gln
 145 150 155 160
 Leu Met Pro Glu Gly Ser Lys Trp Lys Leu Phe Ile Pro Ser Glu Leu
 165 170 175
 Ala Tyr Gly Ala Gln Gly Ala Gly Glu Met Ile Pro Pro His Ser Thr
 180 185 190
 Leu Val Phe Glu Val Glu Leu Ile Glu Val Leu
 195 200

<210> 7902

<211> 499

<212> PRT

<213> B.fragilis

<400> 7902

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Leu Lys Lys Ser Ile Ala Phe Ala Leu Leu Leu Arg Met Phe Tyr Leu
1      5      10      15
Cys Thr Thr Leu Tyr Phe Lys Gln Phe Thr Phe Met Ser Thr Glu Leu
20      25      30
Phe Ser Thr Leu Pro Tyr Lys Val Ala Asp Ile Thr Leu Ala Asp Phe
35      40      45
Gly Arg Lys Glu Ile Asp Leu Ala Glu Lys Glu Met Pro Gly Leu Met
50      55      60
Ala Leu Arg Glu Lys Tyr Gly Glu Ser Lys Pro Leu Lys Gly Ala Arg
65      70      75      80
Ile Met Gly Ser Leu His Met Thr Ile Gln Thr Ala Val Leu Ile Glu
85      90      95
Thr Leu Val Ala Leu Gly Ala Glu Val Arg Trp Cys Ser Cys Asn Ile
100     105     110
Tyr Ser Thr Gln Asp His Ala Ala Ala Ile Ala Ala Ser Gly Val
115     120     125
Ala Val Phe Ala Trp Lys Gly Glu Thr Leu Ala Asp Tyr Trp Trp Cys
130     135     140
Thr Leu Gln Ala Leu Asn Phe Glu Gly Gly Lys Gly Pro Thr Val Ile
145     150     155     160
Val Asp Asp Gly Gly Asp Ala Thr Met Met Ile His Val Gly Tyr Glu
165     170     175
Ala Glu Asn Asn Ala Ala Val Leu Asp Lys Glu Val His Ala Glu Asp
180     185     190
Glu Ile Glu Leu Asn Ala Ile Leu Lys Lys Val Leu Ala Glu Asp Lys
195     200     205
Glu Arg Trp His Arg Val Ala Ala Glu Val Arg Gly Val Ser Glu Glu
210     215     220
Thr Thr Thr Gly Val His Arg Leu Tyr Gln Met Gln Glu Glu Gly Lys
225     230     235     240
Leu Leu Phe Pro Ala Phe Asn Val Asn Asp Ser Val Thr Lys Ser Lys
245     250     255
Phe Asp Asn Leu Tyr Gly Cys Arg Glu Ser Leu Ala Asp Gly Ile Lys
260     265     270
Arg Ala Thr Asp Val Met Ile Ala Gly Lys Val Val Val Cys Gly
275     280     285
Tyr Gly Asp Val Gly Lys Gly Cys Ser His Ser Met Arg Ser Tyr Gly
290     295     300
Ala Arg Val Leu Val Thr Glu Val Asp Pro Ile Cys Ala Leu Gln Ala
305     310     315     320
Ala Met Glu Gly Phe Glu Val Val Thr Met Glu Asp Ala Cys Lys Glu
325     330     335
Gly Asn Ile Phe Val Thr Thr Thr Gly Asn Ile Asp Ile Ile Arg Ile
340     345     350
Asp His Met Glu Gln Met Lys Asp Gln Ala Ile Val Cys Asn Ile Gly
355     360     365
His Phe Asp Asn Glu Ile Gln Val Asp Ala Leu Lys His Tyr Pro Gly
370     375     380
Ile Lys Arg Val Asn Ile Lys Pro Gln Val Asp Arg Tyr Tyr Phe Pro
385     390     395     400
Asp Gly His Ser Ile Ile Leu Leu Ala Asp Gly Arg Leu Val Asn Leu
405     410     415
Gly Cys Ala Thr Gly His Pro Ser Phe Val Met Ser Asn Ser Phe Thr
420     425     430
Asn Gln Thr Leu Ala Gln Ile Glu Leu Phe Asn Lys Lys Tyr Asp Ile

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435 440 445
 Asn Val Tyr Arg Leu Pro Lys His Leu Asp Glu Glu Val Ala Arg Leu
 450 455 460
 His Leu Glu Lys Ile Gly Val Lys Leu Thr Lys Leu Thr Pro Glu Gln
 465 470 475 480
 Ala Ala Tyr Ile Gly Val Ser Val Asp Gly Pro Tyr Lys Ala Asp His
 485 490 495
 Tyr Arg Tyr

<210> 7903
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 7903
 Lys Ile Phe Pro Ala Ile His Cys Gly Ile Lys Asp Asn Ala Tyr Leu
 1 5 10 15
 Cys Thr Leu Lys Glu Thr Phe Tyr Arg Ser Ile Ile Leu Leu Ile Met
 20 25 30
 Tyr Leu Asp Ala Ala Lys Lys Gln Glu Ile Phe Ser Lys Tyr Gly Lys
 35 40 45
 Ser Asn Thr Asp Thr Gly Ser Ala Glu Ala Gln Ile Ala Leu Phe Ser
 50 55 60
 Tyr Arg Ile Thr His Leu Thr Glu His Met Lys Leu Asn Arg Lys Asp
 65 70 75 80
 Tyr Ser Thr Glu Arg Ala Leu Thr Met Leu Val Gly Lys Arg Arg Ala
 85 90 95
 Leu Leu Asp Tyr Leu Lys Ala Lys Asp Ile Thr Arg Tyr Arg Asp Ile
 100 105 110
 Ile Lys Glu Leu Gly Leu Arg Lys
 115 120

<210> 7904
 <211> 532
 <212> PRT
 <213> B.fragilis

<400> 7904
 Lys Ser Val Leu Ser Val Val Lys Leu Lys Pro Asn Glu Leu Glu Thr
 1 5 10 15
 Asn Pro Arg Met Asn Gln Lys Ile Ile Tyr Ser Ser Ala Leu Leu Val
 20 25 30
 Gly Leu Gly Ser Pro Gln Ala Phe Ala His Lys Glu Lys Ala His Thr
 35 40 45
 Pro Gln Lys Pro Asn Ile Ile Phe Ile Met Cys Asp Asp Met Gly Tyr
 50 55 60
 Gly Asp Leu Gly Cys Tyr Gly Gln Pro Tyr Ile Ser Thr Pro Asn Ile
 65 70 75 80
 Asp Asn Met Ala Arg Glu Gly Met Arg Phe Thr Gln Ala Tyr Ala Gly
 85 90 95
 Ser Pro Val Ser Ala Pro Ser Arg Ala Ser Leu Met Thr Gly Gln His
 100 105 110
 Thr Gly His Cys Glu Val Arg Gly Asn Lys Glu Tyr Trp Thr Gln Ala
 115 120 125
 Ser Thr Val Met Tyr Gly Asp Asn Lys Glu Phe Ser Val Val Gly Gln
 130 135 140
 His Pro Tyr Asp Pro Glu His Val Ile Leu Pro Glu Ile Met Lys Asp
 145 150 155 160

Asn Gly Tyr Thr Thr Gly Met Phe Gly Lys Trp Ala Gly Gly Tyr Glu
 165 170 175
 Gly Ser Ala Ser Thr Pro Asp Lys Arg Gly Ile Asp Glu Tyr Tyr Gly
 180 185 190
 Tyr Ile Cys Gln Phe Gln Ala His Leu Tyr Tyr Pro Asn Phe Leu Asn
 195 200 205
 Arg Tyr Ser Pro Ser Leu Gly Asp Thr Gly Val Val Arg Val Val Met
 210 215 220
 Glu Glu Asn Ile Lys Tyr Pro Met Tyr Gly Pro Asp Tyr His Lys Arg
 225 230 235 240
 Thr Gln Tyr Ser Ala Asp Leu Ile His Gln Lys Ala Met Glu Trp Ile
 245 250 255
 Glu Lys Gln Asp Gly Glu Gln Pro Phe Phe Gly Ile Phe Thr Tyr Thr
 260 265 270
 Leu Pro His Ala Glu Leu Val Gln Pro Glu Asp Ser Ile Leu Asn His
 275 280 285
 Tyr Lys Thr Gln Phe Ala Asp Asp Lys Ala Phe Gly Gly Gln Lys Gly
 290 295 300
 Ser Arg Tyr Asn Ala Ile Thr His Val His Ala Gln Phe Ala Gly Met
 305 310 315 320
 Ile Thr Arg Leu Asp Tyr Tyr Val Gly Glu Val Leu Lys Lys Leu Glu
 325 330 335
 Glu Lys Gly Phe Asp Glu Asn Thr Ile Val Ile Phe Thr Ser Asp Asn
 340 345 350
 Gly Pro His Glu Glu Gly Gly Ala Asp Pro Thr Phe Phe Gly Arg Asp
 355 360 365
 Gly Lys Leu Arg Gly Leu Lys Arg Gln Cys Tyr Glu Gly Gly Ile Arg
 370 375 380
 Val Pro Phe Ile Val Arg Trp Pro Gly Gln Val Ala Ala Gly Thr Val
 385 390 395 400
 Asn Asp His Gln Cys Ala Phe Tyr Asp Val Met Pro Thr Leu Cys Asp
 405 410 415
 Leu Thr Gly Val Lys Asn Phe Thr Lys Lys Tyr Val Asn Lys Lys Lys
 420 425 430
 Glu Ala Asp Tyr Phe Asp Gly Ile Ser Phe Ala Pro Thr Ile Leu Gly
 435 440 445
 Lys Lys Asn Gln Lys Lys His Asp Phe Leu Tyr Trp Glu Phe Asn Glu
 450 455 460
 Thr Asn Gln Ile Gly Val Arg Met Gly Asp Trp Lys Met Val Val Lys
 465 470 475 480
 Lys Gly Thr Pro Phe Leu Tyr Asn Leu Ala Thr Asp Ile His Glu Asp
 485 490 495
 His Asn Val Ala Ala Glu Asn Pro Asp Ile Val Lys Lys Met Val Gly
 500 505 510
 Ile Ile His Gln Gln His Thr Glu Asn Pro Asn Phe Lys Val Thr Leu
 515 520 525
 Pro Pro Thr Met
 530

<210> 7905

<211> 60

<212> PRT

<213> B.fragilis

<400> 7905

Ser Thr Ser Thr Pro Phe Asn Gly Leu Phe Arg Gln Ser Ala Ala Leu
 1 5 10 15
 Ser Leu Leu Arg Leu His Ile Thr Pro Thr Gly Ser Thr Gly Ile Leu
 20 25 30

Met Thr Ile Val Glu His Asp Ser Leu Leu Pro Phe Thr Glu Asp Gly
 385 390 395 400
 Ile Ala Tyr Leu Val Asp Ile Val Asp Gly Asn Ile Arg Arg Phe Leu
 405 410 415
 Lys Met Cys Phe Arg Leu Ile Glu Glu Ala Ala Leu Thr Phe Thr Ser
 420 425 430
 Pro Asp Asn Lys Ile Asn Lys Ala Phe Ile Glu Ser Gln Asn Leu Leu
 435 440 445
 Glu Gln Glu Ser
 450

<210> 7907
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 7907
 Pro His Thr Thr Thr Thr Leu Pro Ala Ile Ile Thr Ser Val Ala Arg
 1 5 10 15
 Leu Met Pro Ser Ala Asn Asp Ser Arg Gln Pro Tyr Arg Leu Ser Asn
 20 25 30
 Leu Asp Leu Val Thr Glu Ser Phe Thr Leu Lys Ala Gly Asn Asn Asn
 35 40 45
 Leu Pro Ser Ser Cys Ile Trp Tyr Arg Arg Cys Thr Pro Val Val Val
 50 55 60
 Ser Ser Glu Thr Pro Arg Thr Ser Ala Ala Thr Arg Cys Gln Arg Ser
 65 70 75 80
 Leu Ser Ser Ala Ser Thr Phe Phe Ser Ile Ala Phe Asn Ser Ile Ser
 85 90 95
 Ser Ser Ala Cys Thr Ser Leu Ser Asn Thr Ala Ala Leu Phe Ser Ala
 100 105 110
 Ser

<210> 7908
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 7908
 Val Arg Ser Thr Ser Val Pro Phe Lys Ser Ser Ile Ile Thr Glu Phe
 1 5 10 15
 Phe Phe Thr Thr Val Ser Val Ser Asp Asp Glu Met Ile Pro Thr Ser
 20 25 30
 Val Thr Thr Pro Ile Met Asn Lys Thr Met Pro Asp Asn Thr Met Pro
 35 40 45
 Val Thr Val Ala Ser Val Asn Leu Lys Lys Ser Phe Ile Val His Ile
 50 55 60
 Val Phe Met Pro Ala Leu Leu Lys Leu Thr Lys Ile Asn Asn
 65 70 75

<210> 7909
 <211> 329
 <212> PRT
 <213> B.fragilis

<400> 7909
 Ile Tyr Arg Thr Met His Ile Asp Phe Ala Pro Pro Ser Lys Gly Thr
 1 5 10 15

Tyr Asn Asn Ala Gly Ser Ser Arg Gln Leu Ala Ser Tyr Met Glu His
 20 25 30
 Glu Asp Leu Glu Arg Met Glu Lys Gly Ile Tyr Thr Asp Gly Phe Phe
 35 40 45
 Asn Leu Val Asp Asp Asn Ile Tyr Lys Ser Met Val Ile Lys Asp Ile
 50 55 60
 Asp Ser Asn Ile Gly Gln Leu Leu Lys Thr Asp Ala Lys Phe Tyr Ala
 65 70 75 80
 Thr His Val Ser Pro Ser Glu Lys Glu Leu Arg Ala Met Gly Ser Thr
 85 90 95
 Glu Lys Glu Gln Ala Glu Ala Met Lys Arg Tyr Ile Arg Glu Val Phe
 100 105 110
 Ile Pro Glu Tyr Ala Lys Asn Phe Asn Lys Glu Leu Ser Ala Ser Asp
 115 120 125
 Ile Lys Phe Tyr Gly Lys Ile His Phe Asp Arg Asn Arg Ser Asp Asn
 130 135 140
 Gly Leu Asn Met His Cys His Leu Ile Ile Ser Arg Lys Asp Gln Ala
 145 150 155 160
 Asn Lys Lys Lys Leu Ser Pro Leu Thr Asn His Lys Asn Thr Lys Asn
 165 170 175
 Gly Val Ile Lys Gly Gly Phe Ala Arg Val Asn Leu Phe Gln Gln Ala
 180 185 190
 Glu Gln Gly Phe Asp Lys Leu Phe Gly Tyr Asp Arg Gln Gln Ser Glu
 195 200 205
 Ser Phe Asp Tyr His Asn Thr Met Lys Asn Gly Ser Ile Ser Glu Gln
 210 215 220
 Thr Lys Leu Gln Glu Gln Asp Ile Gln Ser Ser Asp Arg Lys Ala Gly
 225 230 235 240
 Ile Asn Gln Gly Ser Asn Gln Glu Asn Leu Leu Ser Ile Asn Leu Val
 245 250 255
 Asn Lys Arg Ile Asn Asn Gln Ala Ser Ser Ile Asp Thr His Ile Val
 260 265 270
 Ile Lys Gln Lys Asp Asn Ala Tyr Ser Thr Ser Ser Phe Asn Gln Glu
 275 280 285
 Thr Asn Gln Ile Phe Gly Ser Phe Ile Ser Ser Ala Ala Gln Asp Ile
 290 295 300
 Arg Ser Ser Ser Asn His Glu Asp Gln Thr Leu Lys Ser Lys Lys Lys
 305 310 315 320
 Lys Lys Lys Glu Arg Ile Asn Lys Leu
 325

<210> 7910
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7910
 Leu Gln Met Thr Cys Leu Phe Asp Thr Thr Ser Lys Asn Tyr Trp Thr
 1 5 10 15
 Ser Phe Pro Asn Gly Phe Ser Ser Ser Tyr Asn Ser Pro Ile Leu Cys
 20 25 30
 Ile Glu Phe Asn Glu Glu Tyr Gly Val Ile Ile Gln Ile Ile His Leu
 35 40 45
 Ile Tyr Lys Glu Phe Leu Arg Lys Ser Leu Ser Leu His Val Pro Lys
 50 55 60

<210> 7911
 <211> 682
 <212> PRT

<213> B.fragilis

<400> 7911

Asn	Glu	Lys	Thr	Leu	Met	Lys	Met	Ile	Leu	Lys	Thr	Met	Val	Cys	Leu
1				5					10					15	
Ala	Val	Ala	Phe	Ser	Gly	Thr	Ala	Gly	Ala	Ala	Asn	Tyr	Ser	Pro	Glu
		20						25				30			
Lys	Ser	Gln	Ala	Ser	Leu	Ala	Leu	Lys	Val	Pro	Gly	Asn	Pro	Ala	Val
		35					40					45			
Glu	Tyr	Pro	Leu	Thr	Leu	Ser	Lys	Leu	Ser	Asp	Ser	Tyr	Phe	Asp	Tyr
	50					55					60				
Glu	Trp	Lys	Ala	Lys	Glu	Lys	Ile	Pro	Val	Thr	Ile	Phe	Gln	Gln	Ile
65					70					75					80
Ser	Thr	Val	Asp	Asp	Lys	Gln	Gln	Val	Thr	Val	Val	Leu	Thr	Ala	Met
			85						90					95	
Glu	Asp	Val	Tyr	Phe	Asn	Phe	Glu	Glu	Arg	Ile	Arg	Thr	Asp	Phe	Arg
		100						105					110		
His	Asp	Asp	Cys	Gln	Phe	Tyr	Leu	Pro	Gly	Phe	Trp	Tyr	Arg	Arg	Asn
	115						120						125		
Leu	Arg	Ser	Pro	Lys	Glu	Ala	Pro	Ser	Phe	His	Thr	Ser	Asp	Ser	Trp
	130					135						140			
Val	Val	Arg	Glu	Asp	Arg	Leu	Ser	Thr	Pro	Leu	Thr	Gly	Ile	Phe	Asp
145					150					155					160
Glu	Lys	Gln	Lys	Lys	Tyr	Met	Thr	Val	Val	Arg	Arg	Ala	Glu	Tyr	Ile
			165						170					175	
Gln	Asp	Ala	Leu	Ser	Thr	His	Lys	Glu	Gly	Glu	Val	Ile	Leu	Ser	Gly
			180					185					190		
Thr	Thr	Ser	Leu	Gly	Phe	Thr	Gly	Phe	Glu	Asn	Leu	Asp	Gly	Thr	Ala
		195					200					205			
Ala	Leu	Ala	Phe	Gly	Phe	Pro	Tyr	Lys	Glu	Ala	Pro	Lys	Thr	Tyr	Ile
	210					215					220				
Arg	Lys	Leu	Thr	Leu	Ala	Pro	Ser	Val	Thr	Ala	Phe	Gln	Leu	Leu	Lys
225					230					235					240
Lys	Gly	Glu	Ser	Ile	Ser	Leu	Thr	Trp	Glu	Ile	His	Glu	Gly	Lys	Gly
			245						250					255	
Glu	Asp	Phe	Ala	Glu	Phe	Val	Ser	His	Thr	Trp	Glu	Tyr	Cys	Tyr	Asp
		260						265					270		
Thr	Phe	Gln	Pro	Lys	Pro	Val	Glu	Thr	Asp	Tyr	Thr	Pro	Asp	Tyr	Thr
	275						280					285			
Lys	Glu	Ile	Leu	Ser	His	Phe	Phe	Ile	Glu	Ser	Phe	Val	Gly	Asp	Arg
	290					295					300				
Pro	Leu	Asn	Tyr	Asn	Ser	Gly	Val	His	Met	Arg	Thr	Asp	Asp	Cys	Gln
305					310					315					320
Asn	Thr	Gly	Ser	Ala	Glu	Val	Gly	Phe	Val	Gly	Arg	Val	Leu	Leu	Asn
			325						330					335	
Ala	Phe	Asn	Ala	Trp	Glu	Tyr	Gly	Trp	Lys	Asn	Asn	Arg	Ala	Asp	Leu
		340						345					350		
Lys	Glu	Asn	Ala	Ala	Lys	Val	Phe	Asp	Thr	Tyr	Leu	Val	Asn	Gly	Phe
		355					360					365			
Ser	Pro	Ala	Gly	Phe	Phe	Lys	Glu	Phe	Val	Asp	Tyr	Arg	Thr	Gly	Tyr
	370					375					380				
Glu	Glu	Thr	Val	Phe	Ser	Ile	Arg	Arg	Gln	Ser	Glu	Gly	Ile	Tyr	Ala
385					390					395					400
Ile	Phe	His	Tyr	Leu	Asp	Phe	Glu	Lys	Arg	Asn	Gly	Arg	Lys	His	Pro
			405						410					415	
Glu	Trp	Glu	Ala	Lys	Val	Arg	Lys	Met	Leu	Asp	Val	Phe	Leu	Gln	Leu
		420						425					430		
Gln	Asn	Pro	Glu	Gly	Ser	Phe	Pro	Arg	Lys	Phe	Lys	Asp	Asp	Leu	Ser
		435					440						445		

Ile Val Asp Lys Ser Gly Gly Ser Thr Pro Ser Ala Thr Leu Pro Leu
 450 455 460
 Val Met Gly Tyr Lys Tyr Phe Lys Asp Lys Arg Tyr Leu Glu Ser Ala
 465 470 475 480
 Lys Arg Thr Ala Glu Tyr Leu Glu Lys Glu Leu Ile Ser Lys Ser Asp
 485 490 495
 Tyr Phe Ser Ser Thr Leu Asp Ala Asn Cys Glu Asp Lys Glu Ala Ser
 500 505 510
 Leu Tyr Ala Ala Thr Ala Thr Tyr Tyr Leu Ala Leu Val Ser Gln Gly
 515 520 525
 Lys Glu Arg Glu His Tyr Thr Gly Leu Thr Lys Lys Ala Ala Tyr Phe
 530 535 540
 Ala Leu Ser Trp Tyr Tyr Leu Trp Asp Val Pro Phe Ala Pro Gly Gln
 545 550 555 560
 Met Leu Gly Asp Ile Gly Leu Lys Thr Arg Gly Trp Gly Asn Val Ser
 565 570 575
 Val Glu Asn Asn His Ile Asp Val Phe Ile Phe Glu Phe Ala Ser Ile
 580 585 590
 Leu Asn Trp Leu Ser Lys Glu Tyr Ser Glu Pro Arg Phe Ser Gln Phe
 595 600 605
 Ala Glu Val Ile Ser Thr Ser Met Arg Gln Leu Leu Pro Tyr Glu Gly
 610 615 620
 His Leu Cys Gly Val Ala Lys Cys Gly Tyr Tyr Pro Glu Val Val Gln
 625 630 635 640
 His Thr Asn Trp Asp Tyr Gly Lys Asn Gly Lys Gly Tyr Tyr Asn Asp
 645 650 655
 Ile Phe Ala Pro Gly Trp Thr Val Ala Ser Leu Trp Glu Leu Phe Ser
 660 665 670
 Pro Gly Arg Ala Glu Gln Phe Phe Leu Ile
 675 680

<210> 7912

<211> 323

<212> PRT

<213> B.fragilis

<400> 7912

Ile Arg Tyr Phe Lys Met Lys Thr Asp Phe Ile Gln Ile Ala Ser Tyr
 1 5 10 15
 Ala Ser Lys Ala Pro Ser Gly His Asn Thr Gln Pro Trp Lys Phe His
 20 25 30
 Ile Thr Asp Ser Thr Ile Thr Val Leu Pro Asn Leu Asn Val Ala Leu
 35 40 45
 Pro Val Val Asp Arg Asn Asn Arg Glu Leu Phe Ile Ser Leu Gly Cys
 50 55 60
 Ala Val Glu Asn Leu Cys Ile Ala Ala Ser Tyr Phe Gly Tyr Thr Thr
 65 70 75 80
 His Ile Ile Glu Cys Ser Ile Glu Ala Ile Ile Leu Glu Leu Thr Lys
 85 90 95
 Asn Asp Leu Thr Ile Glu Asp Pro Leu Phe His Gln Ile Glu Lys Arg
 100 105 110
 Gln Thr Asn Arg Asn Ile Tyr Asn Gly Asn Lys Ile Ser Asn Gly Ile
 115 120 125
 Leu Gln Gln Leu Gln Ser Ile Pro Lys Glu Asn Gly Ile Gln Phe Tyr
 130 135 140
 Phe Thr Glu Ile Asn Thr Pro Phe Ala Asn Thr Ile Thr Gln Tyr Ile
 145 150 155 160
 Met Lys Gly Asn Glu Ile Gln Met Ala Asp Ile Ala Phe Lys Asn Glu
 165 170 175

Leu Leu Ser Trp Met Arg Phe Asn Lys Lys Gln Val Glu Ala Thr His
 180 185 190
 Asn Gly Leu Ser Tyr Leu Val Phe Gly Asn Pro Pro Leu Pro Arg Ile
 195 200 205
 Leu Ala Arg Pro Ile Val Ser Leu Phe Leu Lys Pro Asn Ala Gln Asn
 210 215 220
 Lys Ser Asp Arg Lys Lys Ile Asp Ser Ser Ser His Phe Val Val Cys
 225 230 235 240
 Thr Thr Gln Arg Asp Thr Ile Glu Glu Trp Ile Asn Leu Gly Arg Thr
 245 250 255
 Leu Gln Arg Phe Leu Leu Lys Val Thr Glu Ile Gly Ile Ala Tyr Ala
 260 265 270
 Phe Leu Asn Gln Pro Cys Glu Val Ala Ala Leu Ala Phe Asp Leu Arg
 275 280 285
 Glu Lys Leu Pro Val Asn Lys Glu His Pro Thr Leu Ile Met Arg Ile
 290 295 300
 Gly Tyr Ala Lys Gln Ile Pro Tyr Ser Pro Arg Lys Lys Ile Glu Thr
 305 310 315 320
 Leu Leu Val

<210> 7913
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 7913
 Ile Cys Lys Ala Phe Phe His Val Ser Phe Glu Arg Trp Gly Val Arg
 1 5 10 15
 Pro Val Tyr Leu Lys Ile Lys Ala Ser Met Lys Asn Leu Val Val Leu
 20 25 30
 Ser Gly Ala Gly Met Ser Ala Glu Ser Gly Ile Ser Thr Phe Arg Asp
 35 40 45
 Ala Gly Gly Leu Trp Asp Arg Tyr Pro Val Glu Gln Val Ala Thr Pro
 50 55 60
 Glu Gly Tyr Ala Arg Asp Pro Glu Leu Val Thr His Phe Tyr Asn Glu
 65 70 75 80
 Arg Arg Lys Gln Leu Leu Glu Val Glu Pro Asn Arg Gly His Glu Leu
 85 90 95
 Leu Ala Glu Leu Glu Lys Asp Phe Arg Val Thr Ile Val Thr Gln Asn
 100 105 110
 Ile Asp Asn Leu His Glu Arg Ala Gly Ser Arg His Ile Ile His Leu
 115 120 125
 His Gly Glu Leu Thr Lys Val Cys Ser Ser Arg Asp Pro Asn Asn Pro
 130 135 140
 His Tyr Ile Lys Glu Leu Lys Pro Glu Glu Phe Glu Val Lys Ile Gly
 145 150 155 160
 Asp Leu Ala Gly Asp Gly Ser Gln Leu Arg Pro Phe Ile Val Trp Phe
 165 170 175
 Gly Glu Ser Val Pro Glu Ile Glu Thr Ala Ile Asp Trp Val Glu Lys
 180 185 190
 Ala Asp Val Phe Val Ile Ile Gly Thr Ser Met Asn Val Tyr Pro Ala
 195 200 205
 Ala Gly Leu Leu Asn Tyr Val Pro Arg Asn Ala Glu Ile Tyr Leu Ile
 210 215 220
 Asp Pro Lys Pro Val Asp Val His Ser Ser Arg Pro Ile His Val Ile
 225 230 235 240
 Gln Lys Gly Ala Ser Glu Gly Val Ala Glu Leu Arg Glu Arg Leu Leu
 245 250 255

Thr Thr Asn His Ala
260

<210> 7914
<211> 262
<212> PRT
<213> B.fragilis

<400> 7914

Lys Tyr Leu Tyr Cys Met Asn Lys Met Asn Val Ala Ile Ile Glu Asp
1 5 10 15
Glu Ile Pro Ala Ala Arg Leu Leu His Ser Met Val Ser Gly Leu Arg
20 25 30
Pro Gln Trp Glu Leu Thr Leu Ile Pro Gly Ser Val Asp Glu Ala Val
35 40 45
Ala Trp Phe Asp Glu His Pro His Pro Asp Leu Ile Phe Leu Asp Ile
50 55 60
His Leu Ala Asp Gly Asn Ala Phe Asp Phe Leu Ser Ala Ala His Pro
65 70 75 80
Ser Ser Val Ile Ile Phe Thr Thr Ala Tyr Asp Gln Tyr Ala Ile Arg
85 90 95
Ala Phe Thr Val Asn Ser Ile Asp Tyr Ile Leu Lys Pro Ile Asp Glu
100 105 110
Lys Arg Leu Ser Asp Ala Ile Thr Lys Tyr Glu Ser Leu Leu Thr Asn
115 120 125
Ala Val Pro Arg Pro Glu Asp Tyr Leu Gly Thr Leu Phe Glu Ala Leu
130 135 140
Gln Tyr Lys Glu Lys Arg Tyr Arg Thr Arg Phe Leu Ile Ser Gly Val
145 150 155 160
Asp Arg Phe Trp Ser Leu Gln Val Ala Asp Ile Ala Tyr Phe Tyr Ser
165 170 175
Glu Asn Lys Val Thr Phe Ala Val Thr Arg Lys Gly Gln Glu His Ile
180 185 190
Leu Asp Leu Ser Leu Asn Lys Leu Met Glu Gln Leu Asp Pro Glu Arg
195 200 205
Phe Phe Arg Ala Asn Arg Gln Val Leu Val Cys Ile Asp Ala Ile Asp
210 215 220
His Ala Glu Pro Phe Phe Asn Gly Lys Ile Val Val Thr Val Arg Pro
225 230 235 240
Pro Tyr Lys Gln Lys Ile Thr Ile Ser Glu Glu Lys Leu Ser Ala Phe
245 250 255
Lys Leu Trp Leu Asn His
260

<210> 7915
<211> 353
<212> PRT
<213> B.fragilis

<400> 7915

Ile Leu Pro Tyr His Lys Ile Arg Tyr Met Arg Thr Glu Ile Ala Thr
1 5 10 15
Leu Gly Glu Phe Gly Leu Ile Lys His Leu Thr Glu Gly Ile Lys Leu
20 25 30
Glu Asn Glu Ser Ser Lys Tyr Gly Val Gly Asp Asp Ala Ala Val Leu
35 40 45
Ser Tyr Pro Ala Asp Lys Gln Val Leu Val Thr Thr Asp Leu Leu Met
50 55 60
Glu Gly Val His Phe Asp Leu Thr Tyr Thr Pro Leu Lys His Leu Gly

65 70 75 80
 Tyr Lys Ser Ala Val Val Asn Phe Ser Asp Ile Tyr Ala Met Asn Gly
 85 90 95
 Thr Pro Lys Gln Ile Thr Ala Ser Leu Ala Leu Ser Lys Arg Phe Ser
 100 105 110
 Val Glu Asp Met Asp Glu Phe Tyr Ser Gly Leu Arg Leu Ala Cys Gln
 115 120 125
 Gln Tyr Lys Val Asp Ile Val Gly Gly Asp Thr Thr Ser Ser Leu Thr
 130 135 140
 Gly Phe Ala Ile Ser Ile Thr Cys Ile Gly Glu Ala Asp Lys Asp Lys
 145 150 155 160
 Val Val Tyr Arg Asn Gly Ala Lys Asp Thr Asp Leu Ile Cys Val Ser
 165 170 175
 Gly Asp Leu Gly Ala Ala Tyr Met Gly Leu Gln Leu Leu Glu Arg Glu
 180 185 190
 Lys Ala Val Phe Lys Gly Glu Gln Asp Ala Gln Pro Asp Phe Ser Gly
 195 200 205
 Lys Glu Tyr Leu Leu Glu Arg Gln Leu Lys Pro Glu Ala Arg Lys Asp
 210 215 220
 Ile Ile Glu Lys Leu Ser Ala Ala Asn Ile Val Pro Thr Ser Met Met
 225 230 235 240
 Asp Ile Ser Asp Gly Leu Ser Ser Glu Leu Leu His Ile Cys Thr Gln
 245 250 255
 Ser Lys Ala Gly Cys Arg Val Tyr Glu Glu His Ile Pro Ile Asp Tyr
 260 265 270
 Gln Thr Ala Val Met Ala Glu Glu Phe Asn Met Asn Leu Thr Thr Cys
 275 280 285
 Ala Met Asn Gly Gly Glu Asp Tyr Glu Leu Leu Phe Thr Val Pro Ile
 290 295 300
 Ala Asp His Glu Lys Val Ser Glu Met Glu Gly Val Arg Leu Ile Gly
 305 310 315 320
 His Ile Thr Lys Pro Glu Leu Gly Cys Ala Leu Ile Thr Arg Asp Gly
 325 330 335
 Gln Glu Phe Glu Leu Lys Ala Gln Gly Trp Asn Pro Leu Gln Glu Asn
 340 345 350
 Lys

<210> 7916

<211> 440

<212> PRT

<213> B.fragilis

<400> 7916

Lys Ala Asn Tyr Glu Gly Gly Tyr Arg Ile Asn Ile Leu Ile Phe Ala
 1 5 10 15
 Tyr Ile Lys Lys Ile Lys Met Asp Phe Leu His Ser Glu Ile Gly Ser
 20 25 30
 Ala Lys Asp Asn Phe Tyr Ser Pro Val His Asn Trp Tyr Lys Phe Thr
 35 40 45
 Ala Gly Phe Ser Tyr Lys Phe Val Glu Ala Ile Leu Glu Gly Glu Lys
 50 55 60
 Asn Ser Gln Asn Ile Val Phe Glu Pro Phe Ala Gly Cys Gly Thr Thr
 65 70 75 80
 Leu Val Ser Ser Gln Lys Cys Gly Val Lys Ala Ile Gly Asn Glu Gly
 85 90 95
 Gln Glu Phe Met Leu Asp Ile Ile Lys Ala Lys Leu Tyr Trp Asn Ile
 100 105 110
 Asp Lys Thr Glu Cys Ile Asn Ser Leu Asn Tyr Ile Asp Ser Tyr Ile


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      115              120              125
Lys Glu His Leu Thr Asn Phe Ser Met Glu Glu Val His Pro Leu Leu
  130              135              140
Ser Thr Leu Tyr Asp Asn Glu Thr Leu Lys Val Leu Tyr Leu Thr Arg
  145              150              155              160
Asp Ser Leu Asp His Ile Ser Asn Asp Lys Ile Arg Leu Phe Leu Lys
      165              170              175
Leu Ala Leu Ser Gln Thr Met His Lys Val Gly Leu Tyr Pro Ile Ala
      180              185              190
Val Pro Tyr Ile Ser Arg Thr Lys Arg Met Ala Asn Ser Gly His Ala
      195              200              205
Phe Ala Arg Phe Gln Ser Ile Val Leu Gln Met Leu Glu Asp Ile Gly
      210              215              220
Pro Leu Gln Asn Ile Glu Gln Thr Ser Glu Ile Tyr Leu His Asp Ser
  225              230              235              240
Arg Phe Glu Asn Pro Asn Ile Gly Asp Ser Ile Cys Asn Tyr Cys Ile
      245              250              255
Thr Ser Pro Pro Tyr Leu Asn Asn Leu Asp Tyr Gly Glu Val Ser Lys
      260              265              270
Val His Thr His Phe Phe Gly Leu Thr Glu Asn Trp Asn Asp Ile Thr
      275              280              285
Gln Lys Val Arg Lys Asn Leu Val Thr Gly Ala Thr Thr His Tyr Arg
      290              295              300
Asp Ile Asp Phe Asp Ile Asn Ile Phe Lys Glu Asn Asp Phe Ser Lys
  305              310              315              320
Glu Asn Gln Leu Val Phe Asp Glu Leu Phe Thr Ser Tyr Ile Gln Ile
      325              330              335
Met Glu Ile Ala Lys Thr Arg Asn Gly Lys Lys Ser Phe Asn Ile Leu
      340              345              350
Met Met His Tyr Phe Glu Asp Met Tyr Tyr Val Leu Lys Glu Met Arg
      355              360              365
Arg Val Leu Lys Lys Gly Ser Lys Ala Tyr Leu Ile Leu Gly Asp Ser
      370              375              380
Ala Pro Tyr Gly Ile Tyr Ile Pro Thr Thr Glu Leu Leu Gly Arg Ile
  385              390              395              400
Ala Tyr Ser Val Gly Phe Asn Lys Tyr His Ile Tyr Lys Ile Arg Thr
      405              410              415
Arg Gly Thr Lys Trp Lys Ser Leu Lys Tyr Arg His Asn Ile Glu Leu
      420              425              430
Ser Glu Asn Val Leu Val Leu Glu
      435              440

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<210> 7917

<211> 167

<212> PRT

<213> B.fragilis

<400> 7917

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Thr Arg Ile Leu Tyr Met Lys Lys Lys Asn Glu Gln Trp Leu Arg Tyr
1              5              10              15
Ser Asn Arg Ala Leu Ser Gly Leu Leu Met Leu Phe Gly Phe Val Ser
      20              25              30
Cys Asp Asn Gly Gly Gly Asp Ile Pro Val Glu Tyr Gly Met Pro Ser
      35              40              45
Ala Lys Tyr Arg Val Lys Gly Lys Val Ile Asp Ala Asp Thr Gln Glu
      50              55              60
Pro Val Pro Gly Ile Glu Val Val Thr Gly Ala Val His Thr Gly Asp
  65              70              75              80
Gly Lys Glu Trp Leu Ser Tyr Pro Asp Thr Leu Ile Thr Asp Lys Asp

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85 90 95
 Gly Ala Phe Ala Thr Glu Arg Thr Glu Phe Pro Ser Lys Lys Tyr Arg
 100 105 110
 Phe Ile Val Arg Asp Val Asp Gly Asp Ala Asn Gly Thr Tyr Ser Lys
 115 120 125
 Asp Ser Val Glu Val Glu Ala Gly Gly Phe Thr Gly Gly Ser His Trp
 130 135 140
 Tyr Arg Gly Glu Thr Ser Ile Asp Lys Thr Ile Glu Ile Lys Lys Glu
 145 150 155 160
 Thr Ala Lys Asp Asn Glu Lys
 165

<210> 7918
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 7918
 Ser Lys Met Tyr Ile Asp Asn Glu Asn Phe Glu Lys Trp Met Glu Lys
 1 5 10 15
 Leu Ser Lys Lys Leu Thr Glu Ile Gly Lys Asp Leu Lys Ser Leu Ile
 20 25 30
 Asn Thr Asp Lys Val Leu Asp Asp Asn Glu Lys Ile Leu Asp Asn Gln
 35 40 45
 Asp Leu Ala Phe Leu Leu Lys Val Ser Phe Arg Thr Leu Gln Arg Tyr
 50 55 60
 Arg Val Ser Gly Leu Leu Pro Phe Phe Thr Ile Gly Lys Lys Thr Tyr
 65 70 75 80
 Tyr Arg Ala Gly Asp Ile Arg Ser Phe Val Arg Glu Arg Ala Asp Phe
 85 90 95
 Gln Ala Tyr Lys Gln Phe Glu Lys Ala Asn Gln Leu Glu Asn Gln Pro
 100 105 110

<210> 7919
 <211> 232
 <212> PRT
 <213> B.fragilis

<400> 7919
 Lys Lys Asp Leu Ser Leu Cys Leu Glu Ile Leu Ser Ile Thr Arg Lys
 1 5 10 15
 Thr Met Asn Met Asn Lys Lys Ile Met Gln Lys Gly Trp Leu Tyr Glu
 20 25 30
 Tyr Glu Val Gly Glu Glu Tyr Arg Arg Asn Tyr Asn Cys Glu Leu Thr
 35 40 45
 Asp Val Arg Tyr Val Leu Gly Glu Gln Phe Asp Met Asp Lys Gln Ser
 50 55 60
 Ala Leu Ile Cys Ile Gly Ile Asn Pro Ser Met Ala Met Pro Asn Phe
 65 70 75 80
 Leu Asp Pro Thr Leu Lys Arg Val Gln Glu Tyr Ala Lys Arg Ser Gly
 85 90 95
 Glu Tyr Gly Ala Trp Tyr Met Leu Asn Val Tyr Pro Gln Arg Ala Thr
 100 105 110
 Asn Pro Asn Asn Met Asp Thr Asp Asp Asn Tyr Asn Met Glu Ile His
 115 120 125
 Leu Arg Asn Leu Val Ala Ile Lys Lys Met Leu Ser Thr Ile Asp Asn
 130 135 140
 Ala Asp Val Trp Cys Ala Trp Gly Ala Thr Ile Ser Asp Pro Lys Arg
 145 150 155 160

Thr Tyr Leu Ser Asp Leu Leu Phe Gly Asn Glu Asn Lys Asn Ile Gln
 165 170 175
 Gly Ile Ile Gly Leu Phe Asn Gly Asn Tyr His Phe Lys Ala Tyr Gly
 180 185 190
 Ala Thr Thr Lys Gly Tyr Pro Lys His Pro Leu Leu Ile Gly Lys Gly
 195 200 205
 Ala Lys Leu Lys Thr Leu Asn Glu Val Glu Leu Lys Glu Leu Ser Asp
 210 215 220
 Arg Ile Thr Asn Ile Ile Lys Lys
 225 230

<210> 7920
 <211> 180
 <212> PRT
 <213> B.fragilis

<400> 7920
 Gln Ser Ile His Arg Lys Ser Lys Phe Ile Arg Thr Gly Ile Ile Met
 1 5 10 15
 Glu Ser Trp Ser Gln Thr Pro Ile Lys Asp Phe Lys Val Ser Phe Phe
 20 25 30
 Leu Asp Thr Asn Ile Leu Cys Tyr Leu Val Asp Ser Thr Tyr Pro Asn
 35 40 45
 Leu Asn Lys Phe Ile Asn Tyr Leu Gly Asn Asn Pro Phe Ser Asp Val
 50 55 60
 Ile Ser Ser Asp Tyr Val Leu Leu Glu Phe Ile Gly Ile Arg Lys Arg
 65 70 75 80
 Glu His Tyr Leu Arg Ala Val Leu Lys Lys Gly Glu Gln Asp Gly Gln
 85 90 95
 Ser Val Asn Leu Ser Ser Leu Leu Lys Phe His Asn Gln Tyr Ser Ala
 100 105 110
 Pro Glu Val Asp Phe Ile Ser Ile Ile Pro Gln Ile Lys Glu Ser Val
 115 120 125
 Asp His Asp Glu Glu Glu Ile Thr Thr Gln Tyr Asn Ile Asp Phe Asn
 130 135 140
 Cys Lys Phe His Ile Asp Leu Phe Glu Pro Thr Lys Asn Ile Cys Leu
 145 150 155 160
 Val Ser Leu Lys Ser Ala Thr Ile Ile Gln Tyr Thr Ile Lys Gly Arg
 165 170 175
 Phe Met Ser Arg
 180

<210> 7921
 <211> 613
 <212> PRT
 <213> B.fragilis

<400> 7921
 Ile Ser Thr Gln Leu Phe Ile Phe Val Ser Phe Lys Arg Ala Gly Ile
 1 5 10 15
 Lys Thr Ile Cys Thr Met Lys Asp Phe Phe Lys Phe Thr Leu Ala Thr
 20 25 30
 Val Thr Gly Ile Val Leu Ser Gly Ile Val Leu Phe Ile Ile Gly Val
 35 40 45
 Val Thr Leu Val Gly Ile Ile Ser Ser Ser Asp Thr Glu Thr Val Val
 50 55 60
 Lys Lys Asn Ser Val Met Met Leu Asp Leu Lys Gly Thr Leu Val Glu
 65 70 75 80
 Arg Thr Gln Glu Ser Leu Glu Gly Leu Leu Gly Lys Phe Thr Gly Glu

				85						90					95
Thr	Ala	Asp	Thr	Tyr	Gly	Leu	Asp	Asp	Ile	Leu	Ala	Ser	Ile	Lys	Lys
			100					105					110		
Ala	Lys	Glu	Asn	Asp	Asn	Ile	Lys	Gly	Ile	Tyr	Ile	Gln	Ala	Ser	Trp
		115					120					125			
Leu	Asn	Ala	Ser	Tyr	Ala	Ser	Leu	Gln	Ala	Ile	Arg	Lys	Ala	Leu	Asp
	130					135					140				
Asp	Phe	Lys	Glu	Ser	Gly	Lys	Phe	Ile	Val	Ala	Tyr	Ser	Asp	Asn	Tyr
145					150					155				160	
Thr	Gln	Gly	Leu	Tyr	Leu	Ser	Ser	Val	Ala	Asp	Lys	Val	Met	Leu	
			165					170					175		
Asn	Pro	Lys	Gly	Met	Ile	Glu	Trp	Arg	Gly	Leu	Ala	Ser	Ala	Pro	Ile
			180					185					190		
Phe	Tyr	Lys	Asp	Leu	Leu	Gln	Lys	Leu	Gly	Ile	Glu	Met	Gln	Val	Phe
	195					200					205				
Lys	Val	Gly	Thr	Tyr	Lys	Ser	Ala	Val	Glu	Pro	Phe	Thr	Ala	Thr	Glu
	210					215					220				
Met	Ser	Pro	Ala	Asn	Arg	Lys	Gln	Val	Thr	Ala	Phe	Ile	Gly	Ser	Ile
225					230					235				240	
Trp	Asn	Gln	Ile	Leu	Asp	Gly	Val	Ser	Ala	Ser	Arg	Lys	Ile	Gly	Lys
			245					250					255		
Asp	Ser	Leu	Asn	Met	Tyr	Ala	Asp	Arg	Met	Leu	Met	Phe	Tyr	Pro	Ser
		260						265					270		
Asp	Glu	Ser	Val	Lys	Cys	Arg	Leu	Ala	Asp	Thr	Leu	Ile	Tyr	Gln	Asn
		275					280					285			
Asp	Val	Arg	Asp	Tyr	Leu	Lys	Thr	Leu	Val	Lys	Ile	Asp	Glu	Asp	Asp
	290					295					300				
Arg	Leu	Pro	Ile	Leu	Gly	Leu	Glu	Glu	Met	Val	Asn	Ile	Lys	Lys	Asn
305					310					315					320
Val	Pro	Lys	Asp	Lys	Ser	Gly	Asn	Ile	Leu	Ala	Val	Tyr	Tyr	Ala	Ser
			325					330					335		
Gly	Glu	Ile	Thr	Asp	Tyr	Ala	Gly	Ser	Ala	Ala	Ser	Asp	Glu	Gly	Ile
			340					345					350		
Ile	Gly	Ser	Lys	Met	Ile	Arg	Asp	Leu	Arg	Lys	Leu	Lys	Glu	Asp	Asp
	355						360					365			
Asp	Val	Lys	Ala	Val	Val	Leu	Arg	Val	Asn	Ser	Pro	Gly	Gly	Ser	Ala
	370					375					380				
Phe	Ala	Ser	Glu	Gln	Ile	Trp	His	Ala	Val	Lys	Glu	Leu	Lys	Ala	Lys
385					390					395					400
Lys	Pro	Val	Ile	Val	Ser	Met	Gly	Asp	Tyr	Ala	Ala	Ser	Gly	Gly	Tyr
			405					410					415		
Tyr	Ile	Ser	Cys	Ala	Ala	Asp	Ser	Ile	Ile	Ala	Glu	Pro	Thr	Thr	Leu
			420					425					430		
Thr	Gly	Ser	Ile	Gly	Ile	Phe	Gly	Met	Ile	Pro	Asn	Val	Lys	Gly	Leu
	435						440					445			
Thr	Glu	Lys	Ile	Gly	Leu	Thr	Tyr	Asp	Val	Val	Lys	Thr	Asn	Gln	Phe
	450					455					460				
Ser	Asp	Phe	Gly	Asn	Leu	Met	Arg	Pro	Val	Asn	Ser	Asp	Glu	Arg	Ala
465					470					475				480	
Leu	Leu	Gln	Met	Met	Ile	Gly	Gln	Gly	Tyr	Asp	Leu	Phe	Val	Ser	Arg
			485					490					495		
Cys	Ala	Glu	Gly	Arg	His	Met	Ser	Lys	Asp	Lys	Ile	Glu	Lys	Ile	Ala
		500						505				510			
Glu	Gly	Arg	Val	Trp	Thr	Gly	Glu	Met	Ala	Lys	Lys	Ile	Gly	Leu	Val
	515						520					525			
Asp	Glu	Leu	Gly	Gly	Ile	Gly	Lys	Ala	Leu	Glu	Ile	Ala	Ala	Gln	Lys
	530					535					540				
Ala	Asp	Leu	Lys	Gly	Tyr	Thr	Ile	Ile	Ser	Tyr	Pro	Ala	Lys	Lys	Asp
545					550					555					560

100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560

[illegible]

<400> 7922

Ser	Tyr	Asn	Gln	Lys	Met	Lys	Asp	Met	Arg	Leu	Cys	Phe	Ser	Val	Cys
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Asn	Arg	Arg	Phe	Leu	Thr	Gly	Val	Ile	Met	Phe	Met	Leu	Leu	Tyr	Pro
			20					25					30		
Met	Ser	Val	Phe	Ala	Val	Gln	Gly	Gln	Ile	Ala	Val	Gln	Gly	Lys	Ala
		35					40					45			
Met	Ser	Ile	Lys	Gln	Ala	Ile	Gln	Val	Ile	Glu	Lys	Asn	Ser	Lys	Tyr
	50					55				60					
Thr	Phe	Phe	Tyr	Lys	Ala	Ala	Asp	Leu	Ser	Asn	Ala	Lys	Ile	Arg	Asp
65				70						75				80	
Ile	His	Cys	Glu	Gly	Ser	Ile	Glu	Glu	Val	Leu	Asn	Val	Leu	Phe	Lys
			85					90						95	
Asp	Ser	Gly	Ile	Ser	Tyr	Val	Ile	Lys	Asp	Asn	Glu	Val	Ile	Leu	Lys
			100					105					110		
Ser	Thr	Pro	Val	Val	Val	Ala	Thr	Pro	Gln	Gln	Ser	Asn	Lys	Ile	Val
		115					120						125		
Val	Lys	Gly	Asn	Ile	Arg	Asp	Thr	Leu	Gly	Glu	Ser	Val	Ile	Gly	Ala
	130					135					140				
Thr	Ile	Met	Glu	Lys	Asn	Asn	Ala	Gln	Asn	Gly	Ser	Ile	Ser	Asp	Ile
145				150						155				160	
Asn	Gly	Asp	Phe	Ser	Leu	Ser	Val	Ser	Pro	Gly	Ala	Val	Ile	Val	Ile
			165						170					175	
Ser	Tyr	Ile	Gly	Tyr	Val	Thr	Gln	Glu	Leu	Lys	Ala	Ile	Ala	Gly	Ala
			180					185					190		
Pro	Leu	Lys	Val	Val	Leu	Lys	Asp	Asp	Ser	Arg	Thr	Leu	Asp	Glu	Val
		195					200					205			
Val	Val	Val	Gly	Phe	Gly	Ser	Gln	Lys	Lys	Ala	Asn	Leu	Thr	Gly	Ala
	210					215					220				
Val	Ser	Ser	Ile	Lys	Met	Asp	Glu	Ile	Ile	Gly	Asp	Arg	Pro	Ile	Met
225				230						235				240	
Thr	Ala	Ser	Asp	Ala	Leu	Gln	Gly	Thr	Val	Pro	Gly	Leu	Leu	Val	Ser
			245						250					255	
Asn	Ser	Gly	Asn	Ala	Pro	Gly	Ser	Gly	Lys	Ser	Phe	Gln	Leu	Arg	Gly
			260					265					270		
Ala	Tyr	Ser	Val	Gly	Ile	Lys	Asn	Ser	Asp	Gly	Ser	Tyr	Gly	Ala	Asn
		275					280					285			
Val	Ala	Pro	Leu	Ile	Leu	Ile	Asp	Asn	Val	Glu	Gly	Ser	Leu	Asp	Met
	290					295					300				
Leu	Asn	Pro	Glu	Asp	Ile	Glu	Thr	Val	Thr	Val	Leu	Lys	Asp	Ala	Ala
305				310						315				320	
Ser	Ala	Ala	Ile	Tyr	Gly	Ala	Arg	Ala	Ala	Gly	Gly	Val	Val	Leu	Val
			325						330					335	
Thr	Thr	Lys	Arg	Pro	Lys	Glu	Ala	Thr	Ala	Phe	Arg	Leu	Asn	Tyr	Asn
			340					345					350		

Asn Asn Phe Gly Phe Ala Thr Ala Thr Asn Leu Pro Lys Gln Ala Ser
 355 360 365
 Leu Met Asp Tyr Leu Gln Ala Tyr Gln Asp Gly Gly Tyr Ser Asp Ala
 370 375 380
 Tyr Trp Ser Tyr Gly Ser Pro Ser Val Ser Lys Trp Lys Glu Tyr Leu
 385 390 395 400
 Thr Gln Tyr Arg Gln Asp Pro Ser Ser Ile Lys Thr Val Gly Asp Gly
 405 410 415
 Ile Phe Ala Asp Thr Asp Gly Ala Leu Tyr Tyr Leu Asn Glu His Asp
 420 425 430
 Pro Tyr Lys Asn Phe Met Glu Thr Ser Phe Gln Met Asn His Asn Leu
 435 440 445
 Ser Val Ser Gly Gly Thr Asp Lys Leu Arg Tyr Arg Met Ser Ala Gly
 450 455 460
 Tyr Val Ser Thr Asp Gly Val Leu Ile Thr Asp Lys Asp Thr Tyr Glu
 465 470 475 480
 Arg Leu Asn Ile Asn Ser Tyr Ile Ser Ala Asp Ile Thr Lys Trp Phe
 485 490 495
 Thr Gln Glu Leu Thr Met Ser Tyr Ala Arg Thr Asn Gln Ser Gln Pro
 500 505 510
 Asn Ser Gly Leu Gly Ser Met Phe Gly Ser Asn Gln Val Ser Tyr Gln
 515 520 525
 Pro Glu Gly Asn Met Pro Ser Asp Val Cys Ser Thr Ile Ser Gln Asp
 530 535 540
 Leu Pro Phe Asn Thr Pro Arg Asn Gln Val Leu Leu Ala Asn Lys Trp
 545 550 555 560
 Lys Lys Ser Tyr Asp Asn Pro Arg Val Phe Val Lys Ser Ile Leu Lys
 565 570 575
 Pro Phe Lys Gly Phe Glu Ala Val Phe Glu Tyr Thr Phe Asp Lys Asn
 580 585 590
 Met Tyr Asp Tyr Asn Phe Tyr Thr Gly Lys Thr Gln Tyr Thr Asp Ile
 595 600 605
 Gln Gly Gly Asn Asn Ile Trp Asn Ala Ala Lys Asp Tyr Leu Gln Lys
 610 615 620
 Glu Lys Gln Phe Thr Asp Tyr Asn Ala Phe Asn Ile Tyr Gly Thr Tyr
 625 630 635 640
 Lys Phe Asp Leu Asn Lys Asp His His Phe Ser Val Met Ala Gly Phe
 645 650 655
 Asn Gln Glu Ser Lys Tyr Thr Glu Gly Val Asn Val Leu Ser Tyr Asn
 660 665 670
 Gln Ala Val Val Glu Val Pro Ala Leu Gly Ser Gly Thr Gly Asp Leu
 675 680 685
 Lys Ala Thr Asp Ser Tyr Asn Glu Tyr Ser Val Arg Gly Gly Phe Phe
 690 695 700
 Arg Val Asn Tyr Asn Tyr Met Asp Lys Tyr Leu Leu Glu Val Asn Gly
 705 710 715 720
 Arg Tyr Asp Gly Ser Ser Lys Phe Pro Lys Asp Ser Arg Phe Gly Phe
 725 730 735
 Phe Pro Ser Val Ser Leu Gly Trp Asn Val Ala Gln Glu Lys Phe Met
 740 745 750
 Glu Val Thr Arg Asn Tyr Ile Asp Gly Leu Lys Ile Arg Ala Ser Tyr
 755 760 765
 Gly Val Ile Gly Asn Gln Asn Val Val Asn Tyr Ala Tyr Phe Pro Thr
 770 775 780
 Met Ser Val Ser Asn Lys Tyr Asn Gly Trp Leu Ser Gly Gly Asp Tyr
 785 790 795 800
 Val Thr Ala Ile Asn Ser Leu Pro Asn Leu Val Ser Thr Ser Phe Thr
 805 810 815
 Trp Glu Lys Val Ala Thr Thr Asp Ile Gly Leu Asp Leu Asn Met Phe

820					825					830					
Gly	Asn	Arg	Met	Asn	Val	Val	Phe	Asp	Trp	Tyr	Gln	Arg	Asp	Thr	Lys
835					840					845					
Gly	Met	Leu	Ala	Pro	Gly	Met	Gln	Leu	Pro	Ala	Val	Val	Gly	Ala	Ser
850					855					860					
Ser	Pro	Phe	Gln	Asn	Thr	Ala	Asp	Met	Arg	Thr	Arg	Gly	Trp	Glu	Leu
865					870					875					
Ala	Val	Asn	Trp	Arg	Asp	Arg	Ile	Gly	Lys	Phe	Asn	Tyr	Arg	Val	Gly
885					890					895					
Phe	Asn	Leu	Ser	Asp	Ser	Tyr	Ser	Glu	Ile	Thr	Lys	Tyr	Asp	Asp	Asn
900					905					910					
Ala	Ala	Ser	Lys	Leu	Leu	Ser	Asn	Phe	Tyr	Pro	Gly	Gln	Arg	Leu	Gly
915					920					925					
Glu	Ile	Trp	Gly	Tyr	Glu	Val	Asp	Gly	Phe	Tyr	Thr	Val	Asp	Asp	Phe
930					935					940					
Val	Asp	Thr	Asn	Ser	Trp	Lys	Leu	Lys	Asp	Gly	Val	Ala	Ser	Ile	Lys
945					950					955					
Gly	Val	Ser	Pro	Arg	Pro	Gly	Asp	Leu	Lys	Phe	Lys	Asn	Leu	Arg	Asp
965					970					975					
Asp	Asp	Lys	Ser	Thr	Asn	Gln	Ile	Asp	Ser	Gly	Asp	Gly	Thr	Leu	Asp
980					985					990					
Asn	Pro	Gly	Asp	Gln	Lys	Val	Ile	Gly	Asn	Ser	Leu	Pro	Lys	Tyr	Leu
995					1000					1005					
Tyr	Gly	Ile	Thr	Leu	Gly	Ala	Asn	Tyr	Lys	Gly	Phe	Asp	Leu	Asn	Ile
1010					1015					1020					
Met	Met	Gln	Gly	Thr	Gly	Gln	Arg	Asp	Ala	Trp	Ile	Ala	Asn	Asn	Leu
1025					1030					1035					
Val	Phe	Pro	Met	Tyr	Ile	Tyr	Ser	Val	Asn	Asp	Ile	Lys	Tyr	Gln	Pro
1045					1050					1055					
Leu	Phe	Asp	Gly	Leu	Thr	Asp	Tyr	Trp	Arg	Pro	Val	Asp	Ala	Ala	Asn
1060					1065					1070					
Gly	Asp	Tyr	Thr	Ala	Val	Asn	Pro	Asn	Ala	Lys	Tyr	Pro	Arg	Met	Tyr
1075					1080					1085					
Gly	Gln	Asn	Pro	Thr	Val	Gly	Ser	Asn	Tyr	Gly	Arg	Lys	Thr	Asp	Lys
1090					1095					1100					
Tyr	Leu	Ser	Asn	Ala	Ala	Tyr	Phe	Arg	Ile	Lys	Asn	Val	Thr	Leu	Ser
1105					1110					1115					
Tyr	Thr	Val	Pro	Lys	Thr	Trp	Ile	Ser	Arg	Ile	Gly	Leu	Asn	Gln	Leu
1125					1130					1135					
Lys	Gly	Phe	Val	Ser	Val	Glu	Asn	Leu	Ala	Thr	Phe	Ser	Ser	Leu	Pro
1140					1145					1150					
Ser	Gly	Ile	Asp	Pro	Glu	Thr	Leu	Ser	Trp	Asn	Tyr	Pro	Ala	Phe	Arg
1155					1160					1165					
Thr	Val	Ser	Phe	Gly	Ile	Asn	Phe	Thr	Leu						
1170					1175										

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<211> 656

<212> PRT

<213> B.fragilis

<400> 7923

Thr	His	Asn	Gln	Glu	Leu	Lys	Met	Lys	Lys	Ile	Tyr	Leu	Ser	Leu	Ala
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Ile	Leu	Ala	Gly	Ile	Gly	Leu	Ala	Gly	Cys	Asn	Asp	Ser	Phe	Leu	Glu
			20					25					30		
His	Ala	Pro	Val	Thr	Ser	Leu	Thr	Glu	Asn	Asn	Ala	Phe	Arg	Ser	Tyr
		35					40					45			
Asp	Asn	Phe	Lys	Ser	Phe	Ala	Trp	Pro	Cys	Tyr	Glu	Ile	Phe	Lys	Asp

50	Asn Asn Ile Ala Asn Thr	55	Ile Asn Gly Thr Gly	60	Gln Gly Ser Cys Tyr
65	Ala Gly Asp Met Asn Ala Gly Tyr Leu Glu Ser Arg Ala Asn Glu Ser	70		75	80
	85		90		95
Gly Asn Asp Tyr Ala Phe Gly Arg Val Gln Ser Val Ala Ser Gly Asn	100		105		110
Gly Trp Gly Phe Ser Gly Thr Phe Arg Arg Ala Asn Ile Leu Leu Ala	115		120		125
Asn Ile Asp Lys Ser Glu Met Thr Asp Ala Glu Lys Asp His Trp Arg	130		135		140
Ala Val Gly Tyr Phe Phe His Ser Tyr Trp Tyr Met Glu Leu Ile Asn	145		150		155
Arg Phe Gly Ala Val Pro Trp Val Asn Thr Ala Leu Asn Glu Asn Ser	165		170		175
Pro Glu Ala Tyr Gly Pro Arg Val Asp Arg Glu Ile Val Ala Asp Ser	180		185		190
Val Leu Asn Arg Leu Lys Trp Ala Glu Ala Asn Ile Gly Asp Phe Glu	195		200		205
Lys Gln Asp Gly Ala Asn Thr Ile Asn Arg Asp Cys Ile Arg Ala Ala	210		215		220
Ile Ser Arg Phe Ala Leu Arg Glu Ala Thr Trp Arg Lys Tyr His Gly	225		230		235
Ile Asp Gly Ala Gln Lys Phe Phe Asp Glu Cys Ile Arg Val Ser Arg	245		250		255
Leu Leu Met Asn Asp Tyr Pro Thr Leu Tyr Tyr Gly Thr Asp Gly Gln	260		265		270
Pro Ala Ala Gly Tyr Gly Glu Met Trp Thr Thr Glu Asp Leu Gly Lys	275		280		285
Val Pro Gly Val Ile Leu Tyr Met Glu Phe Val Gln Asp Ile Lys Met	290		295		300
Ala Asn Phe Ser Ala Leu Glu His Met Asp Ser His Asn Val Glu Met	305		310		315
Asn Gln His Thr Val Asp Leu Tyr Leu Cys Lys Asp Gly Lys Pro Ile	325		330		335
Ala Thr Ser Ala Asn Tyr His Gly Asp Lys Thr Pro Tyr Ala Thr Phe	340		345		350
Arg Asp Arg Asp Pro Arg Leu Tyr His Val Val Met Pro Pro Tyr Lys	355		360		365
Val Lys Ala Lys Val Lys Thr Lys Glu Asp Pro Arg Thr Trp Asp Tyr	370		375		380
Thr Asp Asp Pro Ala Asp Arg Glu Tyr Ile Asp Ile Met Gly Pro Asn	385		390		395
Glu Ser Cys Asp Asn Pro Gly Ile Gly Met Lys Arg Leu Pro Gly Gln	405		410		415
Asn Trp Ser Ala Ser Leu Val Pro Ser Ser Pro Asn Phe Met Gly Gly	420		425		430
Ile Gly Ala Thr Gly Phe Val Arg Ser Arg Ser Gly Tyr Tyr Phe Trp	435		440		445
Lys Asn Trp Ser Asn Trp Glu Thr Asn Arg Asn Gly Gly Val Thr Leu	450		455		460
Asn Thr Ser Asp Lys Pro Ile Phe Lys Ile Glu Glu Val Leu Leu Asn	465		470		475
Tyr Ala Glu Ala Met Cys Glu Thr Gly Gln Phe Thr Gln Ala Val Ala	485		490		495
Asp Glu Ser Ile Asn Lys Leu Arg Arg Arg Ala Gly Val Ala Asp Met	500		505		510
Lys Val Ala Asp Ile Asp Asp Ser Phe Asp Pro Asn Arg Gly Arg Tyr	515		520		525

Tyr Pro Lys Gly Asn Glu Gln Gly Val Leu Val Asp Pro Val Leu Trp
 530 535 540
 Glu Val Arg Arg Glu Arg Ile Val Glu Leu Met Gly Glu Gly Phe Gly
 545 550 555 560
 Phe Tyr Asp Ile Arg Arg Trp Arg Met Ala Pro Trp Phe Leu Asn Arg
 565 570 575
 Gln Phe Lys Gly Met Trp Met Thr Lys Asp Lys Phe Arg His Gly Ala
 580 585 590
 Gln Phe Leu Leu Asn Glu Thr Thr Gly Gly Pro Asp Pro Ala Asp Gly
 595 600 605
 Ala Met Thr Glu Gly Tyr Ile Tyr Leu Gln Pro Asp Pro Ile Lys Ala
 610 615 620
 Gly Glu Gly Trp Gln Glu Arg Tyr Tyr Leu Tyr Glu Val Pro Thr Gln
 625 630 635 640
 Glu Ile Ile Leu Asn Pro Ala Leu Ala Pro Asn Asn Pro Gly Trp Glu
 645 650 655

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 <212> PRT
 <213> B.fragilis

<400> 7924
 Leu Gln Ser Gln Arg Arg Gln His Thr Thr Ser Ile Ala Gly Ser Tyr
 1 5 10 15
 Thr Thr Val Thr Thr Asn Ala Ile Ser Gln Thr Asn Phe Met Gln Lys
 20 25 30
 Glu Ile Arg Leu Gln Glu Phe Gln Phe Phe Arg Gln Arg Tyr Gln Cys
 35 40 45
 Phe Ile Leu Thr Leu Gln Asn Ile Thr Val Tyr Thr Gly Gln Met Leu
 50 55 60
 Gly Glu Met Asn Ser Ile Thr Arg Val Ile Phe Tyr Phe Ser Asn Gln
 65 70 75 80
 Arg Ile Glu Thr Ile Lys Gln Lys Met Gly Ile Gln Leu Thr Leu
 85 90 95

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<400> 7925
 Lys Asn Asn His Ile Val Leu Met Leu Leu Lys Ala Val Leu Lys Asn
 1 5 10 15
 Asp Leu Ile Gly Leu Ile Met Leu Arg Met Ala Phe Ser Asp Phe Gly
 20 25 30
 His Ile Leu Ser Glu Lys Asp Ile Leu Asn Met Lys Ile His Leu Tyr
 35 40 45
 His Phe Tyr Met His Gln Asn Glu Lys Arg Leu Tyr Phe Leu Phe Glu
 50 55 60
 Thr Asn
 65

<210> 7926
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 <212> PRT
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<400> 7926

Arg Ile Asp Gln Asn Tyr Tyr Leu Ala Gln Asn Leu Phe Leu Ser Ser
 1 5 10 15
 Leu Leu Leu Phe Leu Ile Val Ile Arg Tyr Ile Cys Ser Tyr Gly Phe
 20 25 30
 Tyr Leu Ala Leu Gly Lys Gly Val Leu Ala Pro Val Ile Arg Gly Leu
 35 40 45
 Ser Pro Phe Gln Cys Arg Ser Ala Gln Val Leu Ile Pro Phe
 50 55 60

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<211> 375

<212> PRT

<213> B.fragilis

<400> 7927

Arg Met Lys Gln Leu Tyr Leu Phe Ile Leu Ile Val Phe Cys Cys Met
 1 5 10 15
 Gly Cys Gln Arg Asn Thr Leu Arg Gly Pro Ile Pro Thr Ile Ile Met
 20 25 30
 His Pro Asp Ser Cys Leu Lys Ser Leu Asp Ile Ser Val Met Met Lys
 35 40 45
 Asp Ser Ile Glu Val Ile Lys Leu Glu Thr Thr Asp Ser Cys Leu Ile
 50 55 60
 Gly Phe Ile Asn Lys Ile Ser Phe Thr Asp Lys His Ile Leu Val Ser
 65 70 75 80
 Asp Ala Arg Val Ser Gln Lys Ile Tyr Leu Phe Asp Lys Gly Gly Lys
 85 90 95
 Phe Ile Arg Tyr Ile Ser Asn Lys Gly Thr Gly Pro Gly Glu Tyr Ser
 100 105 110
 Val Ile Gly Asp Phe Thr Ile Lys Gly Asp Ser Val Phe Ile Gln Asp
 115 120 125
 Tyr Tyr Gln Asn Lys Tyr Val Ile Tyr Asp Met Val Ala Asn Glu Ile
 130 135 140
 Lys Asp Asp Ile Pro Tyr Lys Thr His His Ser Gly Val Val Ala Leu
 145 150 155 160
 Asp Asn Tyr Leu Tyr Phe Ile Ser Asn Tyr Phe Thr Ser Pro Ile Gly
 165 170 175
 Asp Tyr Asn Cys Trp Arg Tyr Asp Leu Ser Thr Arg Lys Thr Glu Gly
 180 185 190
 Tyr Leu Pro Phe Thr Val Asp His Ile Ala Asn Gln Pro Ala Trp Thr
 195 200 205
 Ile Asn His Pro Cys Gly Gln Ile Asp Lys Leu Lys Ser Phe Ala Tyr
 210 215 220
 Tyr Arg Ser Asn Asp Thr Ile Tyr Gln Ile Asp Lys Leu Thr Val Ser
 225 230 235 240
 Pro Gln Cys Val Ile His Phe Pro Asn Ser Gly Asp Arg Thr Ser Ser
 245 250 255
 Thr Glu Gly Gly His Ile Ser Gly Ile Val His Leu Gln Gln Ser Val
 260 265 270
 Gly Tyr Ile Leu Gly Thr Tyr Thr Glu Gly Lys Gly Leu Arg Tyr Phe
 275 280 285
 Leu Ile Asp Lys Arg Asn Tyr Ser Ser Gln Met Gly Lys Leu Leu Arg
 290 295 300
 Phe Asn Asn Leu Asp Arg Lys Ser Ile Asn Asn Glu Phe Phe Ile Glu
 305 310 315 320
 Asp Asn Tyr Leu Ile Phe Trp Asp Thr Met Gln Ser Leu Lys Leu Trp
 325 330 335
 Arg Arg Tyr Phe Asp Lys Ala Glu Phe Thr Asn Pro Ala Asp Lys Gln
 340 345 350

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<212> PRT
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Leu	Pro	Glu	Ile	Phe	Arg	Thr	Ile	Ser	Glu	Ser	Leu	Phe	Leu	Ser	Phe
			20					25					30		
Gly	Tyr	Pro	Leu	Ser	Tyr	Thr	Ala	Met	Ala	Ile	Ile	Ala	Ala	Val	Ala
		35					40					45			
Thr	Ala	Val	Gly	Thr	Thr	Val	Lys	Leu	Gln	Phe	Lys	Gln	Gly	Phe	Glu
	50					55					60				
Ile	Phe	Gly	Asn	Ile	Tyr	Cys	Tyr	Phe	Ile	Ser	Asp	Pro	Gly	Thr	Cys
65					70					75					80
Lys	Ser	His	Pro	Ile	Ser	Trp	Ala	Phe	Arg	Pro	Ile	Asp	Lys	Arg	His
				85					90					95	
Gln	Ser	Met	Leu	Arg	Gly	Tyr	Arg	Lys	Ala	Tyr	Glu	Ala	Tyr	Leu	Leu
			100					105					110		
Lys	Thr	Ser	Gly	Asn	Lys	Asn	Lys	Asn	Val	Val	Lys	Glu	Pro	Val	Phe
		115					120					125			
Glu	Ala	Phe	Ile	Val	Lys	Asp	Phe	Thr	Pro	Glu	Ser	Leu	Leu	Met	Gln
	130					135					140				
Leu	Cys	Arg	Ser	Pro	Lys	Gly	Val	Val	Ala	Ile	Ile	Asp	Glu	Leu	Ile
145					150					155					160
Gly	Met	Phe	Lys	Asn	Ala	Asn	Arg	Tyr	Asn	Ser	Ser	Ala	Phe	Ser	Glu
				165					170					175	
Phe	Leu	Asn	Glu	Val	Phe	Ser	Asn	Ile	Thr	Ile	Tyr	Lys	Thr	Arg	Ile
			180					185					190		
Gly	Ser	Glu	Pro	Leu	His	Cys	Leu	Ile	Pro	Tyr	Leu	Thr	Val	Ile	Gly
		195					200					205			
Thr	Thr	Gln	Pro	Ser	Met	Leu	Ser	Glu	Ile	Tyr	Ser	Asn	Asp	Lys	Ser
	210					215					220				
Lys	Asn	Gly	Gly	Met	Ala	Arg	Phe	Ile	Pro	Ile	Phe	Pro	Lys	Asp	Leu
225				230						235					240
Ser	Ile	Pro	Ile	Trp	Ser	Asp	Lys	Glu	His	Asp	Val	Glu	Ile	Glu	Arg
			245						250					255	
Val	Tyr	Ser	Glu	Met	Ile	Asp	Lys	Leu	Leu	Asp	Ile	Glu	Val	Lys	Leu
			260					265					270		
Asn	Glu	Glu	Gly	Asp	Pro	Thr	Pro	Arg	Thr	Ile	Glu	Phe	Thr	Ala	Glu
		275					280					285			
Ala	Lys	Glu	Lys	Ile	Ile	Asp	Trp	Gln	Arg	His	Tyr	Ala	Glu	Lys	Ile
	290					295					300				
Glu	Ser	Glu	Asp	Arg	Gly	Gln	Thr	Tyr	Gln	Asp	Ala	Lys	Thr	Lys	Leu
305				310						315					320
Pro	Ile	Tyr	Leu	Leu	Lys	Phe	Ser	Leu	Leu	Asn	Gln	Met	Met	Arg	Met
			325						330					335	
Ile	Ala	Gly	Glu	Ser	Asn	Ala	Asp	Ala	Val	Asp	Ile	Thr	Ser	Val	Asn
		340						345					350		
Asn	Ala	Ile	Ala	Gln	Ile	Glu	Tyr								

[illegible]

Gln Arg Lys Val Tyr Ala Leu Leu Pro Asn Ser Phe Cys Ile Ser Asp
 385 390 395 400
 Val Tyr Asp Leu Val Met Ala Lys Ala Asp Phe Thr Lys Asp Gln Leu
 405 410 415
 Lys Lys Phe Val Arg Val Arg Asp Tyr Phe Val Arg Ala Ser Lys Gly
 420 425 430
 His Tyr Val Lys Lys Tyr Glu Asp Leu Ser Asp
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<211> 1251

<212> PRT

<213> B.fragilis

<400> 7929

Ser Thr Gln His Trp Asn Ser Phe Ile Thr Ser Leu Tyr Glu Asp Phe
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 Asn Gly Lys His Leu Val Gly Thr Asp Ala Gly Val Tyr Ile Tyr Tyr
 20 25 30
 Pro Glu Lys Glu Ala Phe Glu Glu Phe Asp Cys Gln Ser Leu Glu Lys
 35 40 45
 Thr Arg Ile Glu Arg Ser Val Ser Met Ile Ala Gly Asp Lys Gln Gly
 50 55 60
 Arg Val Trp Ile Ala Val Glu Ala Gln Gly Met Phe Cys Tyr Asp Ala
 65 70 75 80
 Arg Gln Lys Leu Leu Arg Asn Tyr Pro Leu Ser Glu Ile Ser Ser Asn
 85 90 95
 Ile Lys Cys Phe Thr Phe Asp Ser Gly Gly Thr Leu Trp Leu Gly Phe
 100 105 110
 Tyr Gly Asp Gly Leu Tyr Tyr Ser Lys Asp Asn Leu Ala Thr Val His
 115 120 125
 Pro Tyr Gly Ser Pro Glu Asp Gly Lys Arg Glu Phe Glu Gly Gly Val
 130 135 140
 Ile Thr Lys Ile Val Gln Gly Asn Tyr Asn Cys Leu Tyr Ile Gly Ser
 145 150 155 160
 Val Lys Glu Gly Val Ser Glu Leu Asn Leu Thr Ser Gly Gln Val Arg
 165 170 175
 Asn Leu Leu Ala Ile Asp Glu Ser Gly Glu Ser Ile Phe Cys Arg Asp
 180 185 190
 Leu Leu Pro Tyr Ser Asp Asn Glu Leu Trp Ile Gly Thr Glu Ser Gly
 195 200 205
 Ile Tyr Ile Tyr Asn Leu Arg Thr Ala Gln Phe Ile His Leu Arg Ala
 210 215 220
 Ser Leu Tyr Asp Ser Tyr Ser Leu Ser Asp Asn Ala Ile Tyr Ala Leu
 225 230 235 240
 Tyr Lys Asp Arg Glu Glu Gly Leu Trp Ile Gly Ser Tyr Phe Gly Gly
 245 250 255
 Val Asp Tyr Tyr Pro Arg Gln Tyr Thr Tyr Phe Ala Lys Tyr Tyr Pro
 260 265 270
 Lys Asn Ile Ala Asn Ser Leu His Gly Lys Arg Val Arg Glu Phe Cys
 275 280 285
 Arg Ala Asp Asp Gly Thr Leu Trp Ile Gly Thr Glu Asp Gly Gly Leu
 290 295 300
 Asn His Phe Asn Pro Lys Thr Lys Glu Phe His Phe Phe Glu Pro Ser
 305 310 315 320
 Ala Gly Phe Thr Asn Ile His Gly Leu Cys Met Asp Gly Ser His Leu
 325 330 335
 Trp Val Gly Thr Phe Ser Lys Gly Leu Arg Val Ile Asp Thr Arg Thr
 340 345 350

Gly Val Val Leu Arg Thr Tyr Thr Glu Gly His Thr Pro His Ser Leu
 355 360 365
 Asn Asp Asn Ser Ile Phe Ser Ile Cys Arg Thr Ser Ala Gly Glu Ile
 370 375 380
 Tyr Leu Gly Thr Leu Phe Gly Leu Leu Arg Tyr Asn Arg Thr Gln Asp
 385 390 395 400
 Ser Phe Asp Cys Ile Pro Glu Leu Asn Gly Lys Phe Val Tyr Asp Ile
 405 410 415
 Lys Glu Asp Ser Tyr Gly Asn Leu Trp Leu Ala Thr Tyr Ala Asn Gly
 420 425 430
 Ala Tyr Cys Tyr Asp Val Ser Ala Arg Arg Trp Lys Asn Tyr Val Phe
 435 440 445
 Asp Ala Glu Asp Glu Arg Ser Leu Pro Tyr Asp Lys Val Leu Ser Val
 450 455 460
 Phe Glu Asp Ser Tyr Arg Gln Ile Trp Leu Thr Thr Gln Gly Gly Gly
 465 470 475 480
 Phe Cys Leu Phe His Pro Asp Thr Glu Thr Phe Thr Arg Tyr Gly Leu
 485 490 495
 Lys Asp Gly Leu Pro Asn Asp Val Val Tyr Gln Ile Val Glu Asp Asp
 500 505 510
 Asp Arg Phe Leu Trp Leu Thr Thr Asn Asn Gly Leu Val Arg Phe Asp
 515 520 525
 Pro Lys Thr Met Glu Met Lys Val Phe Ser Thr Ala Asn Gly Leu Pro
 530 535 540
 Thr Asn Gln Phe Asn Tyr Arg Ser Gly Phe Lys Asp Glu Ala Gly Asn
 545 550 555 560
 Ile Tyr Leu Gly Ser Ile Asn Gly Phe Val Ala Phe Asp Pro Arg Thr
 565 570 575
 Phe Ala Glu Asn Arg Gln Val Pro Ala Val Ala Ile Thr Asp Phe Leu
 580 585 590
 Leu Phe Asn Lys Glu Val Ser Val Gly Glu Thr Asp Ser Pro Leu Lys
 595 600 605
 Ser Ser Ile Thr Phe Ser Asp Lys Val Val Leu Thr Ala Asp Gln Asn
 610 615 620
 Ser Phe Ser Phe Arg Ile Ala Ala Leu Ser Tyr Gln Ala Pro Arg Met
 625 630 635 640
 Asn Lys Leu Met Tyr Lys Leu Glu Gly Phe Asp Glu Gly Trp Leu Thr
 645 650 655
 Ile Gly Glu Ser Pro Leu Val Thr Tyr Ser Asn Leu Gly Tyr Gly Asp
 660 665 670
 Tyr Val Phe Lys Val Lys Ala Ser Asn Ser Asp Gly Val Trp Asn Glu
 675 680 685
 Gln Glu Thr Ser Leu His Leu Ser Ile Leu Pro Pro Phe Tyr Leu Ser
 690 695 700
 Gly Trp Ala Tyr Cys Phe Tyr Val Leu Phe Phe Met Gly Cys Leu Val
 705 710 715 720
 Cys Val Ile Phe Tyr Phe Lys Arg Arg Asn Tyr Arg Lys Gln His Arg
 725 730 735
 Gln Met Glu Met Leu Glu Gln Glu Lys Glu Arg Glu Val Tyr His Ala
 740 745 750
 Lys Ile Asn Phe Phe Thr Asn Val Ala His Glu Ile Arg Thr Pro Leu
 755 760 765
 Thr Leu Ile Lys Gly Pro Leu Glu Asn Ile Ile Leu Lys Lys Glu Val
 770 775 780
 Asp Ser Glu Thr Lys Glu Asp Leu Tyr Ile Met Lys Gln Asn Thr Glu
 785 790 795 800
 Arg Leu Leu Asn Leu Thr Asn Gln Leu Leu Asp Phe Arg Lys Thr Glu
 805 810 815
 Thr Arg Gly Phe Arg Leu Asn Phe Thr Glu Cys Asp Val Val Ala Val

820 825 830
 Leu Arg Glu Thr Tyr Leu Arg Phe Thr Ser Leu Ala Lys Gln Lys Gly
 835 840 845
 Leu Asp Phe Ile Leu Glu Leu Pro Gln Glu Cys Phe Met Ala Asp Val
 850 855 860
 Asn Gln Glu Ala Leu Thr Lys Ile Ile Ser Asn Leu Leu Asn Asn Gly
 865 870 875 880
 Val Lys Tyr Ala Ser Thr Tyr Leu Arg Ile Ser Leu Glu Thr Asp Glu
 885 890 895
 Lys Val Phe His Ile Arg Thr Phe Asn Asp Gly Glu Met Ile Pro Asp
 900 905 910
 Thr Met Lys Glu Glu Ile Phe Lys Pro Phe Val Arg Leu Asp Lys Glu
 915 920 925
 Asp Glu Val Thr Thr Gly Thr Gly Ile Gly Leu Ala Leu Ser Arg Ser
 930 935 940
 Leu Ala Glu Leu His Gln Gly Ser Leu Met Met Glu Lys Gly Glu Glu
 945 950 955 960
 Val Asn Cys Phe Cys Leu Thr Leu Pro Val Asn Gln Asp Ser Thr Ile
 965 970 975
 Thr Leu Ser Ala Glu Asn Val Ser Gln Val Glu Glu Asn Ser Cys Gly
 980 985 990
 Trp Glu Gln Glu Glu Thr Asp Thr Lys Glu Lys Lys Pro Met Ile Leu
 995 1000 1005
 Val Val Glu Asp Asn Pro Asp Met Leu Ala Phe Ile Arg Lys Gln Leu
 1010 1015 1020
 Thr Thr Glu Tyr Ser Val Leu Thr Ala Met Asn Gly Ile Glu Ala Leu
 1025 1030 1035 1040
 Ala Val Leu Asp Asn His Tyr Val Asn Leu Val Val Ser Asp Val Met
 1045 1050 1055
 Met Pro Gln Met Asp Gly Phe Glu Leu Cys Lys Thr Ile Lys Ser Asp
 1060 1065 1070
 Leu Ser Tyr Ser His Ile Pro Val Val Leu Leu Thr Ala Lys Thr Asn
 1075 1080 1085
 Ile Gln Ser Lys Ile Glu Gly Leu Glu Leu Gly Ala Asp Ala Tyr Ile
 1090 1095 1100
 Glu Lys Pro Phe Ser Val Glu Tyr Leu Leu Ala Asn Ile Ser Ser Leu
 1105 1110 1115 1120
 Ile His Asn Arg Glu Lys Leu Arg Gln Thr Phe Ala Lys Ser Pro Phe
 1125 1130 1135
 Val Ala Ala Asn Thr Met Ala Leu Thr Lys Ala Asp Glu Glu Phe Ile
 1140 1145 1150
 Trp Lys Leu Asn Asp Ile Ile Gln Ala Asn Leu His Asn Pro Glu Phe
 1155 1160 1165
 Ser Met Glu Asp Met Ala Asp Ala Leu Lys Met Ser Arg Ser Ser Phe
 1170 1175 1180
 Tyr Arg Lys Ile Lys Gly Val Leu Asp Leu Ser Pro Asn Glu Tyr Leu
 1185 1190 1195 1200
 Arg Leu Glu Arg Leu Lys Gln Ala Ala Gln Leu Leu Lys Glu Gly Lys
 1205 1210 1215
 Ser Arg Val Asn Glu Ile Cys Tyr Thr Val Gly Phe Asn Ser Pro Ser
 1220 1225 1230
 Tyr Phe Ser Lys Cys Phe Leu Lys Gln Phe Gly Val Leu Pro Lys Asp
 1235 1240 1245
 Phe Ile Gly
 1250

<210> 7930

<211> 85

<212> PRT

<213> B.fragilis

<400> 7930

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His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
1          5          10          15
Cys Lys Arg Leu Val Ile Cys Ala Gln Lys Pro Asp Asn Leu Gln Lys
          20          25          30
Thr Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly
          35          40          45
Ser Asp Gly Val Asn Ser Leu Ser Lys Leu Glu Leu Ser Tyr Ser Ala
          50          55          60
Gly Val Cys Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
65          70          75          80
Leu Glu Ile Lys Lys
          85

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<210> 7931

<211> 100

<212> PRT

<213> B.fragilis

<400> 7931

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Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
1          5          10          15
Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
          20          25          30
Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
          35          40          45
Leu Tyr Arg Asn Pro Leu Ile Ile Lys Pro Cys Gly Ile Ile Ile Pro
          50          55          60
Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
65          70          75          80
Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
          85          90          95
Lys Leu Ser Ser
          100

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<210> 7932

<211> 567

<212> PRT

<213> B.fragilis

<400> 7932

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Phe Ile Pro Lys Met Ile Lys Lys Leu Tyr Leu Pro Leu Leu Met Ala
1          5          10          15
Leu Val Val Ala Leu Ser Ser Cys Ser Asn Lys Met Gly Ala Leu Ser
          20          25          30
Ser Asp Tyr Phe Thr Thr Thr Pro Gln Val Leu Glu Ala Val Gly Gly
          35          40          45
Lys Val Pro Val Thr Ile Asn Gly Lys Phe Pro Glu Lys Tyr Phe Lys
          50          55          60
Lys Asn Ala Val Val Glu Val Thr Pro Val Leu Lys Trp Glu Gly Gly
65          70          75          80
Gln Val Lys Gly Gln Pro Ala Val Phe Gln Gly Glu Lys Val Glu Gly
          85          90          95
Asn Asp Gln Thr Ile Ser Tyr Lys Met Gly Gly Asn Tyr Thr Met Lys
          100          105          110
Thr Thr Phe Asp Tyr Val Pro Glu Met Ala Lys Ser Glu Leu Tyr Leu
          115          120          125

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Glu Phe Asn Ala Lys Val Gly Lys Lys Thr Ile Ala Ile Pro Ala Val
 130 135 140
 Lys Ile Ala Asp Gly Val Ile Ser Thr Ser Glu Leu Ile Asn Asn Thr
 145 150 155 160
 Leu Ser Ser Ala Asn Pro Ala Leu Gly Asp Asp Ala Phe Gln Arg Ile
 165 170 175
 Ile Lys Glu Ala His Asn Ala Asn Ile Met Phe Leu Ile Gln Gln Ala
 180 185 190
 Asn Ile Arg Ser Ser Glu Leu Lys Thr Ala Lys Glu Phe Asn Lys Glu
 195 200 205
 Val Ala Asn Val Asn Asp Ala Glu Asn Lys Lys Ile Ser Asn Ile Glu
 210 215 220
 Ile Ser Ala Tyr Ala Ser Pro Asp Gly Gly Val Lys Leu Asn Thr Gly
 225 230 235 240
 Leu Ala Glu Asn Arg Glu Gly Asn Thr Thr Lys Leu Ile Asn Lys Asp
 245 250 255
 Leu Lys Lys Ala Lys Ile Glu Val Pro Val Asp Ala Lys Tyr Thr Ala
 260 265 270
 Gln Asp Trp Glu Gly Phe Gln Glu Leu Val Ser Lys Ser Asn Ile Gln
 275 280 285
 Asp Lys Glu Leu Ile Leu Arg Val Leu Ser Met Tyr Gln Asp Pro Glu
 290 295 300
 Gln Arg Glu Thr Glu Ile Lys Asn Ile Ser Ser Val Tyr Lys Thr Leu
 305 310 315 320
 Ala Asp Glu Ile Leu Pro Gln Leu Arg Arg Ser Arg Leu Thr Leu Asn
 325 330 335
 Tyr Glu Ile Ile Gly Lys Ser Asp Glu Glu Ile Ala Asn Leu Ala Ala
 340 345 350
 Thr Asp Pro Lys Gln Leu Asn Val Glu Glu Ile Leu Tyr Ala Ala Thr
 355 360 365
 Leu Thr Asn Asp Pro Ala Lys Lys Ala Asp Ile Tyr Thr Lys Ala Ser
 370 375 380
 Gln Gln Phe Pro Asn Asp Tyr Arg Ala Phe Asn Asn Leu Gly Lys Leu
 385 390 395 400
 Ala Tyr Gln Ala Gly Asp Leu Asp Lys Ala Gln Ser Tyr Val Lys Lys
 405 410 415
 Ala Glu Ser Ile Lys Ser Ala Pro Glu Val Asn Met Asn Leu Gly Leu
 420 425 430
 Ile Ala Leu Ala Lys Gly Asp Lys Ala Ala Ala Glu Ser Tyr Leu Gly
 435 440 445
 Lys Ala Ala Gly Ala Lys Glu Leu Asn Glu Thr Leu Gly Asn Leu Tyr
 450 455 460
 Val Ala Gln Gly Gln Tyr Glu Arg Ala Val Asn Ala Phe Gly Asp Thr
 465 470 475 480
 Lys Thr Asn Ser Ala Ala Leu Ala Gln Ile Leu Ala Lys Asp Tyr Asn
 485 490 495
 Lys Ala Lys Asn Thr Leu Ala Gly Ile Ala Thr Pro Asp Ala Tyr Thr
 500 505 510
 Asp Tyr Leu Met Ala Val Leu Gly Ala Arg Thr Asn Asn Thr Ser Met
 515 520 525
 Leu Thr Ser Ser Leu Lys Ser Ala Val Ala Lys Asn Pro Ala Leu Ala
 530 535 540
 Lys Lys Ala Ala Thr Asp Leu Glu Phe Ala Lys Tyr Tyr Thr Asn Ala
 545 550 555 560
 Asp Phe Met Ser Ile Val Lys
 565

<210> 7933

<211> 246

<212> PRT

<213> B.fragilis

<400> 7933

Gln Phe Asn Lys Thr Asn Met Asn Lys Met Gly Leu Thr Leu Ile Tyr
 1 5 10 15
 Leu Trp Leu Val Ser Leu Cys Ser Cys Gln Gln Glu Leu Ile Glu Tyr
 20 25 30
 Glu Lys Gly Asp Val Lys Val His Ile Glu Gln Gly Glu Gln Trp Leu
 35 40 45
 His Asp Phe Pro Leu Phe Leu Gly Ile Asn Lys Lys Asn Pro Pro Gln
 50 55 60
 Ile Ala Ile Trp Leu Glu Asp Thr Gln Gly Asn Tyr Leu Ser Thr Val
 65 70 75 80
 Tyr Val Thr His Lys Ile Ala Thr Gln Ser Trp Gln Ala Ser Gly Gly
 85 90 95
 Asn Arg Arg Lys Glu Ala Leu Pro His Trp Cys Tyr Ser Arg Gly Ile
 100 105 110
 Lys Tyr Asp Asp Glu Leu Tyr Leu Pro Thr Lys Lys Glu Pro Leu Thr
 115 120 125
 Asp Gly Ile Ser Gly Ala Thr Pro His Gly Ser Phe Asp Ile Lys Leu
 130 135 140
 Ser Pro Thr Thr Ala Leu Lys Lys Phe Val Val Lys Ile Glu Ile Asn
 145 150 155 160
 His Ser Thr Asp Phe Asn Glu Ala Phe Pro Lys Leu Ala Lys Glu Gly
 165 170 175
 Glu Thr Asn Tyr Ser Gly Gly Lys Glu Gly Ser Gly Gln Pro Ala Ile
 180 185 190
 Val Tyr Thr Ala Asn Val Asp Leu Leu Ser Gly Glu Lys Ser Phe Glu
 195 200 205
 Ala Asn Leu Ile Gly His Ser Ser Pro Asp Gly Ser Ser Gly Glu Ile
 210 215 220
 Asn Glu Asp Thr Ser Gly Leu Thr Thr Ala Leu His Ile Val Lys Arg
 225 230 235 240
 Ile Thr Val Thr Ile Gln
 245

<210> 7934

<211> 410

<212> PRT

<213> B.fragilis

<400> 7934

Thr Tyr Asn Asn Leu Asn Met Met Thr His Asn Ile Ile Arg His Leu
 1 5 10 15
 Lys Ser Leu Arg Gln Thr Leu Ser Gln Asp Lys Lys Pro Ile Gly Phe
 20 25 30
 Phe Ile Ser Ala Gly Cys Pro Leu Ser Ile Glu Ile Thr Pro Pro Glu
 35 40 45
 Asn Trp Pro Leu Ile Pro Asp Met Lys Lys Leu Ser Glu Tyr Val Thr
 50 55 60
 Ser Ile Leu Lys Ser Ser Asp Thr Thr Lys Leu Ser Thr Tyr Asp Arg
 65 70 75 80
 Leu Ile Ser Glu Leu Glu Lys Thr Asn Lys Ser Lys Glu Asn Leu Glu
 85 90 95
 Asp Ile Leu Ser Phe Ile Arg Ser Leu Lys Asp Val Ala Gln Gly Gly
 100 105 110
 Gly Thr Val Arg Gly Leu Thr Glu Thr Glu Leu Glu Asp Leu Glu Thr
 115 120 125

Asn Ile Cys Lys Leu Ile Val Gly Lys Ile Arg Val Asn Leu Pro Asn
 130 135 140
 Lys Asn Thr Pro Tyr His Lys Leu Ala Lys Trp Ile Ser Ser Ile Asp
 145 150 155 160
 Arg Glu Lys Pro Ile Glu Leu Phe Thr Thr Asn Tyr Asp Leu Leu Met
 165 170 175
 Glu Gln Ala Leu Glu Asp Val Gly Val Pro Tyr Phe Asp Gly Phe Val
 180 185 190
 Gly Ser Arg Gln Ser Phe Phe Asp Leu Arg Thr Val Glu Glu Asp Leu
 195 200 205
 Ala Pro Arg His Trp Thr Arg Leu Trp Lys Ile His Gly Ser Ile Asn
 210 215 220
 Trp Phe Gln Lys Glu Asn Lys Asp Val Phe Arg Ser Asp Ala Tyr Lys
 225 230 235 240
 Asn Asp Thr Asp Glu Ser Ser Tyr Leu Ile Tyr Pro Ser His Leu Lys
 245 250 255
 Tyr Asp Gln Ser Arg Lys Met Pro Phe Leu Ala Leu Ser Asp Gln Leu
 260 265 270
 Gly Arg Phe Leu Lys Gln Pro Ser Ala Ala Leu Ile Leu Cys Gly Tyr
 275 280 285
 Ser Phe Asn Asp Glu His Ile Asn Asp Thr Ile Val Asn Ala Ile Lys
 290 295 300
 Ser Asn Pro Thr Ala Ile Val Ile Ala Leu Met Phe Gly Asn Met Glu
 305 310 315 320
 Asp Gly Ser Ile Glu Arg Tyr Pro Lys Gly Val Glu Leu Ala Leu Lys
 325 330 335
 Arg His Asn Ile Ser Phe Trp Thr Asn Asp Glu Ala Ile Ile Gly Thr
 340 345 350
 Asn Arg Gly Gln Trp Ile Val Leu Asp Lys Asp Val Asp Asp Pro Leu
 355 360 365
 Ile Gln Leu Val Glu Val Asn Ser Ser Thr Asn Asn Lys Thr Ile Lys
 370 375 380
 Phe Gly Asp Phe Lys Val Phe Ser Thr Phe Leu Thr Ser Leu Ile Gly
 385 390 395 400
 Tyr Gln Glu Glu Glu Asn Lys Asn Asp Lys
 405 410

<210> 7935

<211> 435

<212> PRT

<213> B.fragilis

<400> 7935

Ser Arg Asn Lys Ser Met Lys Met Lys Tyr Leu Leu Ala Ala Cys Thr
 1 5 10 15
 Ala Phe Phe Leu Val Ser Cys Ser Asn Asp Asp Glu Pro Gln Pro Ser
 20 25 30
 Pro Gln Tyr Gly Asp Ile Val Gly Leu Asn Ile Lys Asp Ala Lys Tyr
 35 40 45
 Ile Tyr Thr Ser Gly Ser Asn Thr Arg Ser Ser Ser Ala Glu Tyr Arg
 50 55 60
 Gln Ile Lys Lys Asp Gly Arg Asp Met Glu Leu Ser Trp Ile Asp Ser
 65 70 75 80
 Lys Gly Asp Thr Ile Lys Ile Ser Gly Asn Pro Lys Ile Trp Asn Ile
 85 90 95
 Asn Lys Lys Tyr Leu Met Ile Asn Thr Gly Val Pro Ile Asn Tyr Gln
 100 105 110
 Pro Lys Tyr Asp Glu Asp Gly Asp Arg Leu Pro Asp Ser Thr Pro Leu
 115 120 125

Gly Gly Tyr Ser Tyr Leu Ile Asp Lys Thr Thr Glu Ala Ile Tyr Asp
 130 135 140
 Leu Ala Glu Gly Leu Asn Gly Glu Asn Ala Val Thr Asp Asn Lys Gly
 145 150 155 160
 Asn Ile Tyr Ala Val Asp Asn Ser Thr Gly Ala Val Leu Phe Lys Ile
 165 170 175
 His Thr Gln Asp Ala Ala Asn Leu Lys Leu Glu Leu Tyr Ala Lys Ala
 180 185 190
 Ser Thr Ser His Lys Thr Pro Phe Val Val Asn Asn Lys Gly Ile Cys
 195 200 205
 Phe Tyr Asp Tyr Arg Tyr Ile Arg Pro Ser Tyr Gly Thr Gln Gln Phe
 210 215 220
 Ile Ile Ser Asn Phe Ile Ser Gly Thr Glu Tyr Gly Asn Ala Phe Val
 225 230 235 240
 Ser His Asp Asn Glu Asp Met Tyr Ile Thr Ala Ile Asn Ser Ser Leu
 245 250 255
 Glu Glu Gly Lys Ser Asn Leu Ile Val Ser Lys Leu Lys Glu Asn Lys
 260 265 270
 Glu Ile Gln Ser Glu Val Met Ala Glu Leu Ser Phe Asp Gly Ile Trp
 275 280 285
 Gln Ser Gln Met Ser Asp Gly Ile Gln Val Lys Trp Asn Asp Arg Arg
 290 295 300
 Gly Thr Met Leu Ile His Leu Tyr Arg Tyr Asn Glu Ser Thr Tyr Glu
 305 310 315 320
 Tyr Leu Leu Ala Thr Lys Thr Leu Thr Lys Ile Pro Val Asn Leu Gly
 325 330 335
 Gly Phe Phe Thr Lys Asp Tyr Ser Thr Tyr Ile Thr Thr Asn Ala Leu
 340 345 350
 Tyr Ala Gln Lys Ser Val Asn Lys Leu Asp Ile Ile Ala Leu Glu Asp
 355 360 365
 Tyr Ser Thr Lys Thr Leu Asp Leu Ser Gly Lys Gly Ile Asp Phe Arg
 370 375 380
 Ser Ile Tyr Thr Met Glu Gly Ser Asp Leu Leu Tyr Phe Ala Gly Phe
 385 390 395 400
 Gln Tyr Ser Thr Ser Gln Ser Val Ile Gly Thr Ile Asp Ile Asp Gly
 405 410 415
 Asn Ile Glu Ile Ser Glu Ser Thr Pro Asn Pro Ile Thr Asn Ile Ile
 420 425 430
 Gln Ile Asn
 435

<210> 7936

<211> 87

<212> PRT

<213> B.fragilis

<400> 7936

His Ser Val Lys Met Tyr Phe Glu Ile Pro Gln Asn Gln Phe Phe Val
 1 5 10 15
 Pro Trp Lys Gln Glu Glu Ser Lys Lys Arg Arg Asn Thr Leu Phe Gln
 20 25 30
 Glu Val Arg Glu Ser Glu Asn Thr Val Lys Cys Tyr His Lys Asp Lys
 35 40 45
 Ile Pro Arg Ala Phe Thr Leu Arg Lys Lys Pro Gly Asn Leu Ile Asn
 50 55 60
 Ile Arg Asn Asn Thr Phe Lys Lys Ser Pro Pro Asn Ser Val Leu Glu
 65 70 75 80
 Glu Lys Ala Val Leu Phe Pro
 85

<210> 7937
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 7937
 Ile Asn Val Asn Pro Ile Leu Phe Ile Leu Val Leu Leu Asn Cys Tyr
 1 5 10 15
 Phe Ile Ile Val Thr Asn Arg Glu His Gly Lys Gln Lys Asn Ile Arg
 20 25 30
 Leu Val Met Phe Gln Ser Phe Tyr Gly Glu Asn Lys Gly Phe Ala Leu
 35 40 45
 His Asn Gln Phe Ser Leu Leu Met Leu Gly Val Pro Tyr
 50 55 60

<210> 7938
 <211> 633
 <212> PRT
 <213> B.fragilis

<400> 7938
 Leu Gly Thr Lys Lys Lys Lys Ile Lys Met Thr Ser Lys Ala Thr Tyr
 1 5 10 15
 Ile Gly Asp Val Gln Asn Val Asn Gly Thr Thr Val Ser Val Thr Phe
 20 25 30
 Ser Pro Asn Cys Ile Ser Gly Leu Thr Tyr Val Asn Gly Glu Gly Tyr
 35 40 45
 Lys Ile Gly Gln Val Gly Ser Phe Val Lys Ile Pro Leu Gly Tyr Thr
 50 55 60
 Asp Leu Phe Gly Ile Val Ser Gln Ile Gly Ala Asn Ala Val Pro Glu
 65 70 75 80
 Ala Gln Ile Glu Ser Gln Pro His Gly Asn Arg Trp Ile Thr Ile Gln
 85 90 95
 Leu Ile Gly Glu Gly Gln Arg Ser Gly Gly Phe Glu Arg Gly Ile Ser
 100 105 110
 Gln Tyr Pro Thr Ile Gly Asp Glu Val His Leu Val Ser Glu Ser Asp
 115 120 125
 Leu Lys His Ile Tyr Gly Asn Ile Asp Lys Thr Asn Leu Val Asn Ile
 130 135 140
 Gly His Ile Ala Gly Ala Glu Ser Ile Pro Ala Leu Ile Asp Ile Asn
 145 150 155 160
 Lys Leu Ile Thr Arg His Ser Ala Ile Val Gly Ser Thr Gly Ser Gly
 165 170 175
 Lys Ser Thr Thr Val Ala Gly Leu Leu Asp Ala Leu Ser Asn Asn Asn
 180 185 190
 Lys Tyr Pro Ala Ser Arg Ile Leu Ile Phe Asp Ile His Gly Glu Tyr
 195 200 205
 Ser Lys Thr Phe Lys Asp Ser Ala Asn Ile Tyr Lys Ile Asn Pro Glu
 210 215 220
 Glu Thr Ser Glu Pro Asn Ile Lys Ser Leu Asp Ile Pro Tyr Trp Ala
 225 230 235 240
 Met Ser Phe Asp Glu Leu Ile Ser Leu Thr Leu Gly Asp Ile Asp Glu
 245 250 255
 Lys Glu Lys Ala Pro Ile Gly Glu Leu Ile Ile Glu Leu Lys Lys Lys
 260 265 270
 Thr Phe Thr Asp Ser Pro Asp Lys Tyr Pro Asp Ile Asp Ile Asn Arg
 275 280 285
 Ile Thr Val Asp Thr Pro Leu Pro Phe Ser Leu Lys Arg Leu Trp Leu

290 295 300
 Tyr Leu Tyr Arg Leu Val Tyr Ser Thr His Asn Thr Gln Ser Thr Gly
 305 310 315 320
 Gln Arg Phe Cys Ser Ile Thr Glu Asn Phe Asp Ile Arg Asn Thr Thr
 325 330 335
 Glu Ala Phe Lys Leu Asp Ser Glu Asp Thr Pro Leu Gln Leu Gly Asn
 340 345 350
 Ala Glu Asp Ile Ile Pro Pro His Tyr Leu Pro Gln Gln Ala Ser Arg
 355 360 365
 Ile Tyr Gln Ser Ser Ser Thr Leu Asn Ile Arg Arg Pro Ile Ser Leu
 370 375 380
 Leu Thr Ser Lys Leu Arg Asp Pro Arg Tyr Asp Phe Val Phe Asn Pro
 385 390 395 400
 Gly Ser Trp Thr Val Asp Leu Glu Gly Asn Ile Glu Gln Asp Leu Asp
 405 410 415
 Ser Leu Phe Lys Met Trp Ile Gly Glu Lys Asn Ile Ser Ile Leu Asp
 420 425 430
 Leu Ser Gly Ile Pro Asn Asn Ile Leu Asn Thr Ile Ile Gly Ile Leu
 435 440 445
 Leu Arg Ile Ile Tyr Asp Ala Ile Phe Trp Ser Arg Lys Leu Pro Gln
 450 455 460
 Gly Gly Lys Glu Arg Pro Leu Leu Leu Val Met Glu Glu Ala His Asn
 465 470 475 480
 Tyr Leu Asn Asp Asn Phe Lys Gly Val Ala Ser Ser Ile Val Gln Arg
 485 490 495
 Ile Val Lys Glu Gly Arg Lys Tyr Gly Ile Gly Ala Met Ile Val Ser
 500 505 510
 Gln Arg Pro Ser Glu Ile Asn Ser Thr Ile Leu Ser Gln Cys Gly Thr
 515 520 525
 Ile Ile Ser Leu Arg Leu Ser Asn Ala Thr Asp Arg Gly His Val Thr
 530 535 540
 Gly Thr Val Thr Asp Ser Leu Glu Gly Leu Met Asn Met Leu Pro Ile
 545 550 555 560
 Leu Arg Thr Gly Glu Ala Ile Val Val Gly Glu Ser Val Lys Leu Pro
 565 570 575
 Met Arg Ala Gln Ile Ser Ala Pro Ser Lys Glu Arg Arg Pro Asp Ser
 580 585 590
 Gln Asp Pro Ile Val Val Ser Glu Asn Glu Asn Asp Lys Ile Gly Trp
 595 600 605
 Arg Asn Glu Thr Ser Ile Ser Asp Asn Asp Tyr Thr Lys Met Ile Lys
 610 615 620
 Ala Trp Arg Lys Gln Asp Pro Asn Val
 625 630

<210> 7939
 <211> 285
 <212> PRT
 <213> B.fragilis

<400> 7939
 Lys Tyr Tyr Lys Ile Asn Lys Ile Ile Leu Thr Asn Thr Leu Leu Ala
 1 5 10 15
 Met Leu Glu Lys Ile Gln Glu Thr Ala Ala Phe Leu Lys Gly Lys Met
 20 25 30
 His Thr Ser Pro Glu Thr Ala Ile Ile Leu Gly Thr Gly Leu Gly Ser
 35 40 45
 Leu Ala Asn Glu Ile Thr Glu Lys Tyr Glu Ile Lys Tyr Glu Asp Ile
 50 55 60
 Pro Asn Phe Pro Val Ser Thr Val Glu Gly His Ser Gly Lys Leu Ile

65 70 75 80
 Phe Gly Lys Leu Gly Asn Lys Glu Ile Met Ala Met Gln Gly Arg Phe
 85 90 95
 His Tyr Tyr Glu Gly Tyr Ser Met Lys Glu Val Thr Phe Pro Val Arg
 100 105 110
 Val Met Arg Glu Leu Gly Ile Lys Thr Leu Phe Val Ser Asn Ala Ser
 115 120 125
 Gly Gly Thr Asn Pro Glu Phe Glu Ile Gly Asp Leu Met Ile Ile Thr
 130 135 140
 Asp His Ile Asn Tyr Phe Pro Glu His Pro Leu Arg Gly Lys Asn Ile
 145 150 155 160
 Pro Tyr Gly Pro Arg Phe Pro Asp Met Ser Glu Ala Tyr Asp Lys Glu
 165 170 175
 Leu Ile Arg Lys Ala Asp Val Ile Ala Ala Glu Lys Gly Ile Lys Val
 180 185 190
 Gln His Gly Ile Tyr Ile Gly Thr Gln Gly Pro Thr Phe Glu Thr Pro
 195 200 205
 Ala Glu Tyr Lys Leu Phe His Ile Leu Gly Ala Asp Ala Val Gly Met
 210 215 220
 Ser Thr Val Pro Glu Val Ile Val Ala Asn His Cys Gly Ile Lys Val
 225 230 235 240
 Phe Gly Ile Ser Val Val Thr Asp Leu Gly Val Glu Gly Lys Ile Val
 245 250 255
 Glu Val Ser His Glu Glu Val Gln Lys Ala Ala Asp Ala Ala Gln Pro
 260 265 270
 Lys Met Thr Thr Ile Met Arg Glu Leu Ile Asn Arg Ala
 275 280 285

<210> 7940
 <211> 640
 <212> PRT
 <213> B.fragilis

<400> 7940
 Val Thr Ile Asn Val Phe Ser Leu Trp Ile Arg His Trp Ala Val Val
 1 5 10 15
 Gln Phe Lys Lys Asp Asp Val Ala Tyr Glu Arg Asp Tyr Phe Met Ser
 20 25 30
 Tyr Pro Ala Asn Val Met Ala Ile Arg Phe Lys Ala Asp Arg Pro Gly
 35 40 45
 Lys Gln Asn Leu Thr Phe Ser Tyr Ser Pro Asn Pro Val Ser Thr Gly
 50 55 60
 Ser Met Ser Ala Asp Gly Ala Asn Gly Leu Ala Tyr Thr Ala His Leu
 65 70 75 80
 Asp Asn Asn Gly Met Gln Tyr Val Val Arg Ile His Ala Ile Ala Lys
 85 90 95
 Gly Gly Thr Leu Ser Asn Ala Asn Gly Lys Ile Thr Val Lys Asp Ala
 100 105 110
 Asp Glu Ala Val Phe Leu Val Thr Ala Asp Thr Asp Tyr Lys Ile Asn
 115 120 125
 Phe Asp Pro Asp Phe Lys Asp Pro Lys Ala Tyr Val Gly Val Asn Pro
 130 135 140
 Ala Glu Thr Thr Arg Gln Trp Met Asp Asn Ala Val Ala Met Gly Tyr
 145 150 155 160
 Asp Val Leu Phe Lys Gln His Tyr Asp Asp Tyr Ala Ala Leu Phe Asn
 165 170 175
 Arg Val Lys Leu Gln Leu Asn Pro Asp Ala Gln Ser Ala Asn Leu Pro
 180 185 190
 Thr Gly Lys Arg Leu Gln Asn Tyr Arg Lys Gly Gln Pro Asp Phe Tyr

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195          200          205
Leu Glu Glu Leu Tyr Tyr Gln Phe Gly Arg Tyr Leu Leu Ile Ala Ser
210          215          220
Ser Arg Pro Gly Asn Met Pro Ala Asn Leu Gln Gly Ile Trp His Asn
225          230          235          240
Asn Val Asp Gly Pro Trp Arg Val Asp Tyr His Asn Asn Ile Asn Ile
245          250          255
Gln Met Asn Tyr Trp Pro Ala Cys Ser Thr Asn Leu Tyr Glu Cys Thr
260          265          270
Leu Pro Leu Ile Asp Phe Ile Arg Thr Leu Val Lys Pro Gly Gln Lys
275          280          285
Thr Ala Gln Ala Tyr Phe Gly Thr Arg Gly Trp Thr Ala Ser Ile Ser
290          295          300
Ala Asn Ile Phe Gly Phe Thr Thr Pro Leu Glu Ser Glu Glu Met Ala
305          310          315          320
Trp Asn Phe Asn Pro Met Ala Gly Pro Trp Leu Ala Thr His Val Trp
325          330          335
Glu Tyr Tyr Asp Tyr Thr Arg Asp Lys Lys Phe Leu Lys Glu Thr Gly
340          345          350
Tyr Asp Leu Ile Lys Ser Ser Ala Gln Phe Ala Thr Asp Phe Leu Trp
355          360          365
Arg Lys Pro Asp Gly Thr Tyr Thr Ala Ala Pro Ser Thr Ser Pro Glu
370          375          380
His Gly Pro Ile Asp Glu Gly Thr Thr Phe Val His Ala Val Ile Arg
385          390          395          400
Glu Ile Leu Gln Asp Ala Ile Glu Ala Ser Lys Val Leu Gly Val Asp
405          410          415
Ser Lys Glu Arg Lys Gln Trp Gln Glu Val Leu Thr His Leu Ala Pro
420          425          430
Tyr Lys Val Gly Arg Tyr Gly Gln Leu Met Glu Trp Ser Lys Asp Ile
435          440          445
Asp Asp Pro Lys Asp Glu His Arg His Val Asn His Leu Phe Gly Leu
450          455          460
His Pro Gly His Thr Leu Ser Pro Ile Thr Thr Pro Asp Leu Ala Lys
465          470          475          480
Ala Ala Arg Val Val Leu Glu His Arg Gly Asp Gly Ala Thr Gly Trp
485          490          495
Ser Met Gly Trp Lys Leu Asn Gln Trp Ala Arg Leu Gln Asp Gly Asn
500          505          510
His Ala Tyr Lys Leu Phe Gly Asn Leu Leu Lys Asn Gly Thr Leu Asp
515          520          525
Asn Leu Trp Asp Thr His Pro Pro Phe Gln Ile Asp Gly Asn Phe Gly
530          535          540
Gly Thr Ala Gly Ile Thr Glu Met Leu Leu Gln Ser His Met Gly Phe
545          550          555          560
Ile Gln Leu Leu Pro Ala Leu Pro Asp Ala Trp Lys Asp Gly Ser Ile
565          570          575
Ser Gly Ile Cys Ala Lys Gly Asn Phe Glu Val Asp Leu Ser Trp Lys
580          585          590
Asn Gly Gln Leu Ala Glu Ala Thr Ile Phe Ser Lys Ala Gly Glu Pro
595          600          605
Cys Thr Val Arg Tyr Gly Asp Lys Thr Leu Ser Phe Lys Thr Ser Lys
610          615          620
Gly Lys Val Tyr Lys Leu Ala Leu Asp Ala Asp Arg Leu Val Ile Lys
625          630          635          640

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<210> 7941

<211> 688

<212> PRT

<213> B.fragilis

<400> 7941

Ile	Thr	Ile	Asn	Thr	Arg	Asn	Ile	Ser	Met	Glu	Lys	Asn	Phe	Lys	Arg
1			5					10					15		
Thr	Thr	Val	Thr	Ser	Ala	Leu	Pro	Tyr	Ala	Asn	Gly	Pro	Val	His	Ile
		20					25					30			
Gly	His	Leu	Ala	Gly	Val	Tyr	Val	Pro	Ala	Asp	Ile	Tyr	Val	Arg	Tyr
		35				40					45				
Leu	Arg	Leu	Lys	Lys	Glu	Asp	Val	Leu	Phe	Ile	Gly	Gly	Ser	Asp	Glu
	50				55						60				
His	Gly	Val	Pro	Ile	Thr	Ile	Arg	Ala	Lys	Lys	Glu	Gly	Ile	Thr	Pro
65				70						75				80	
Gln	Asp	Val	Val	Asp	Arg	Tyr	His	Phe	Leu	Ile	Lys	Lys	Ser	Phe	Glu
			85					90						95	
Glu	Phe	Gly	Ile	Ser	Phe	Asp	Val	Tyr	Ser	Arg	Thr	Ser	Ser	Lys	Thr
		100					105					110			
His	His	Glu	Leu	Ala	Ser	Asp	Phe	Phe	Lys	Lys	Leu	Tyr	Glu	Lys	Gly
	115					120						125			
Glu	Phe	Ile	Glu	Lys	Thr	Ser	Glu	Gln	Tyr	Tyr	Asp	Glu	Glu	Ala	His
	130				135						140				
Gln	Phe	Leu	Ala	Asp	Arg	Tyr	Ile	Thr	Gly	Glu	Cys	Pro	His	Cys	His
145				150						155					160
Ser	Glu	Gly	Ala	Tyr	Gly	Asp	Gln	Cys	Glu	Lys	Cys	Gly	Thr	Ser	Leu
			165					170						175	
Ser	Pro	Thr	Asp	Leu	Ile	Asn	Pro	Lys	Ser	Ala	Ile	Ser	Gly	Ser	Lys
		180					185						190		
Pro	Val	Met	Lys	Glu	Thr	Lys	His	Trp	Tyr	Leu	Pro	Leu	Asp	Lys	His
		195					200					205			
Glu	Thr	Trp	Leu	Arg	Gln	Trp	Ile	Leu	Glu	Glu	His	Lys	Glu	Trp	Arg
	210				215						220				
Pro	Asn	Val	Tyr	Gly	Gln	Cys	Lys	Ser	Trp	Leu	Asp	Met	Gly	Leu	Gln
225				230						235					240
Pro	Arg	Ala	Val	Ser	Arg	Asp	Leu	Asp	Trp	Gly	Ile	Pro	Val	Pro	Val
			245					250						255	
Glu	Gly	Ala	Glu	Gly	Lys	Val	Leu	Tyr	Val	Trp	Phe	Asp	Ala	Pro	Ile
		260					265						270		
Gly	Tyr	Ile	Ser	Asn	Thr	Lys	Glu	Leu	Leu	Pro	Asp	Ser	Trp	Glu	Thr
	275					280						285			
Trp	Trp	Lys	Asp	Pro	Glu	Thr	Arg	Leu	Val	His	Phe	Ile	Gly	Lys	Asp
	290				295						300				
Asn	Ile	Val	Phe	His	Cys	Ile	Val	Phe	Pro	Ala	Met	Leu	Lys	Ala	Glu
305				310						315					320
Gly	Ser	Tyr	Ile	Leu	Pro	Asp	Asn	Val	Pro	Ser	Asn	Glu	Phe	Leu	Asn
			325					330						335	
Leu	Glu	Gly	Asp	Lys	Ile	Ser	Thr	Ser	Arg	Asn	Trp	Ala	Val	Trp	Leu
		340					345						350		
His	Glu	Tyr	Leu	Glu	Asp	Phe	Pro	Gly	Lys	Gln	Asp	Val	Leu	Arg	Tyr
	355					360						365			
Val	Leu	Thr	Ala	Asn	Ala	Pro	Glu	Thr	Lys	Asp	Asn	Asp	Phe	Thr	Trp
	370				375						380				
Lys	Asp	Phe	Gln	Ala	Arg	Asn	Asn	Asn	Glu	Leu	Val	Ala	Val	Tyr	Gly
385				390						395					400
Asn	Phe	Val	Asn	Arg	Ala	Met	Val	Leu	Thr	Gln	Lys	Tyr	Phe	Glu	Gly
			405					410						415	
Lys	Val	Pro	Ala	Ala	Gly	Glu	Leu	Thr	Asp	Tyr	Asp	Lys	Glu	Thr	Leu
		420					425						430		
Lys	Glu	Phe	Ser	Asp	Val	Lys	Ala	Glu	Val	Glu	Lys	Leu	Leu	Asn	Val
	435					440						445			

Phe Lys Phe Arg Asp Ala Gln Lys Glu Ala Met Asn Leu Ala Arg Ile
 450 455 460
 Gly Asn Lys Tyr Leu Ala Asp Thr Glu Pro Trp Lys Leu Ala Lys Thr
 465 470 475 480
 Asp Met Glu Arg Val Gly Thr Ile Leu Asn Ile Ser Leu Gln Leu Val
 485 490 495
 Ala Asn Leu Ala Ile Ala Phe Glu Pro Phe Leu Pro Phe Ser Ser Glu
 500 505 510
 Arg Leu Arg Gln Met Leu Asn Met Asp Ser Phe Asp Trp Ala Glu Leu
 515 520 525
 Gly Arg Asn Asp Leu Leu Pro Ala Gly His Gln Leu Asn Lys Pro Glu
 530 535 540
 Leu Leu Phe Glu Lys Ile Glu Asp Ala Thr Ile Glu Ala Gln Val Gln
 545 550 555 560
 Lys Leu Leu Asp Thr Lys Lys Ala Asn Glu Glu Ala Asn Tyr Lys Ala
 565 570 575
 Lys Pro Ile Arg Ala Asn Ile Glu Phe Asp Asp Phe Met Lys Leu Asp
 580 585 590
 Ile Arg Val Gly Thr Val Leu Glu Cys Gln Lys Val Pro Lys Ala Asp
 595 600 605
 Lys Leu Leu Gln Phe Lys Ile Asp Asp Gly Leu Glu Thr Arg Thr Ile
 610 615 620
 Val Ser Gly Ile Ala Gln His Tyr Lys Pro Glu Glu Leu Val Gly Lys
 625 630 635 640
 Gln Val Cys Phe Ile Ala Asn Leu Ala Pro Arg Lys Leu Lys Gly Ile
 645 650 655
 Val Ser Glu Gly Met Ile Leu Ser Ala Glu Asn Asn Asp Gly Ser Leu
 660 665 670
 Ala Val Val Met Pro Gly Arg Glu Val Lys Pro Gly Ser Glu Val Lys
 675 680 685

<210> 7942

<211> 67

<212> PRT

<213> B.fragilis

<400> 7942

Ser Ile Ser Leu Leu Lys Ala Glu Leu Val Phe Val Met Val Arg Lys
 1 5 10 15
 Gly His Val Lys Val Gly His Ala Gln Lys Ser Gly Tyr Asn Gln Ile
 20 25 30
 Glu Asp Glu Thr Ala Ile Phe Ile Tyr Ile Asn Ser Phe Leu Leu His
 35 40 45
 Gly Leu Ser Ala Lys Tyr Ile Ala Arg Ser Tyr Ser Tyr Tyr Tyr Tyr
 50 55 60
 Ala Ser Gly
 65

<210> 7943

<211> 64

<212> PRT

<213> B.fragilis

<400> 7943

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
 1 5 10 15
 Phe Gly Asn Leu Arg Ile Lys Gly His Leu His Leu Pro Glu Ala Tyr
 20 25 30
 Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala

[illegible]

<400> 7946															
Leu	Leu	Lys	Asn	Thr	Lys	Ile	Met	Lys	Ile	Lys	Met	Lys	Tyr	Ile	Val
1				5					10					15	
Ala	Gln	Ala	Cys	Leu	Val	Ala	Gly	Ala	Ser	Ile	Ala	Leu	Thr	Ser	Cys
			20					25					30		
Asn	Asp	Phe	Leu	Asp	Arg	Glu	Pro	Leu	Asp	Gln	Val	Thr	Pro	Gln	Glu
		35					40					45			
Tyr	Phe	Gln	Thr	Ala	Asp	His	Leu	Ala	Ala	Tyr	Thr	Ile	Ser	Lys	Tyr
	50					55				60					
Asn	Ser	Met	Phe	Ser	Thr	His	Ser	Gly	Trp	Asn	Ala	Gly	Thr	Val	Asn
65					70					75					80
Asn	Asp	Gly	Gly	Thr	Asp	Asn	Met	Val	Val	Gly	Gly	Tyr	Asn	Ser	Thr

				85					90					95	
Tyr	Tyr	Glu	Lys	Gly	Ile	Trp	Lys	Val	Pro	Ser	Asn	Asn	Asp	Asn	Trp
			100					105					110		
Ser	Asn	Gly	Leu	Ser	Leu	Ala	Arg	Tyr	Cys	Asn	Tyr	Phe	Phe	Glu	Gln
		115					120					125			
Val	Leu	Pro	Lys	Tyr	Glu	Ala	Gly	Lys	Ile	Ser	Gly	Ala	Glu	Asp	Asp
		130				135					140				
Leu	Lys	His	Tyr	Ile	Gly	Glu	Met	Tyr	Phe	Met	Arg	Ala	Leu	Ile	Tyr
145				150						155					160
Tyr	Asn	Gln	Leu	Arg	Lys	Tyr	Gly	Asp	Tyr	Pro	Ile	Ile	Thr	Glu	Val
			165					170						175	
Leu	Pro	Asp	Asp	Glu	Ala	Ile	Leu	Ile	Glu	Lys	Ser	Val	Arg	Gln	Pro
		180						185					190		
Arg	Asn	Lys	Val	Ala	Arg	Phe	Ile	Leu	Glu	Asp	Leu	Asp	Lys	Ala	Ile
		195					200					205			
Gly	Leu	Met	Lys	Asn	Gln	Gly	Phe	Met	Asn	Asn	Asn	Arg	Leu	Asn	Lys
		210				215					220				
Gln	Cys	Ala	Leu	Leu	Ile	Lys	Ser	Arg	Val	Ala	Leu	Tyr	Glu	Ala	Thr
225					230					235					240
Phe	Glu	Lys	Tyr	His	Gln	Gly	Thr	Gly	Arg	Val	Pro	Gly	Asp	Glu	Thr
			245						250					255	
Trp	Pro	Gly	Lys	Ser	Val	His	Pro	Asn	Phe	Ser	Leu	Asp	Val	Thr	Ala
			260					265					270		
Glu	Ile	Asn	Phe	Phe	Leu	Asp	Gln	Cys	Met	Asp	Ala	Ala	Ser	Gln	Val
		275					280					285			
Ala	Asp	Ala	Ile	Thr	Leu	Thr	Glu	Asn	Thr	Gly	Val	Phe	Asn	Pro	Leu
		290				295					300				
Ser	Asp	Ser	Glu	Tyr	Ser	Gly	Trp	Asn	Pro	Tyr	Phe	Glu	Met	Phe	Ser
305					310					315					320
Ala	Glu	Asp	Met	Ser	Gly	Tyr	Ser	Glu	Val	Leu	Phe	Trp	Lys	Asp	Tyr
			325						330					335	
Leu	Arg	Ser	Gly	Ser	Ile	Asn	Ile	Ser	His	Gly	Ala	Pro	Asn	Tyr	Ile
			340					345					350		
Tyr	Ser	Gly	Gly	Asn	Asn	Gly	Met	Leu	Arg	Ser	Tyr	Val	Gln	Thr	Phe
		355					360					365			
Leu	Met	Glu	Asn	Gly	Leu	Pro	Trp	Tyr	Ala	Ser	Asn	Ser	Gly	Phe	Lys
		370				375					380				
Gly	Asp	Ser	Arg	Ile	Gln	Glu	Glu	Lys	Glu	Gly	Arg	Asp	Gln	Arg	Leu
385					390					395					400
Gln	Leu	Phe	Leu	Phe	Gly	Glu	Lys	Asp	Lys	Gln	Ala	Pro	Arg	Ala	Asp
			405						410					415	
Gly	Asp	Gly	Thr	Met	Pro	Glu	Phe	Gly	Glu	Pro	Ala	Leu	Phe	Glu	Leu
			420					425					430		
Gln	Glu	Val	Arg	Asp	Leu	Thr	Gly	Tyr	Arg	Ile	Arg	Lys	Cys	Leu	Thr
		435					440					445			
Tyr	Lys	Lys	Asp	Gln	Ile	Ile	Ser	Gly	Ser	Asp	Gln	Ser	Thr	Thr	Gly
		450				455					460				
Cys	Ile	Ile	Tyr	Arg	Gly	Val	Glu	Ala	Tyr	Leu	Asn	Tyr	Leu	Glu	Ala
465					470					475					480
Tyr	Tyr	Leu	Arg	Asn	Gly	Lys	Val	Asp	Gly	Lys	Ala	Ala	Gln	Tyr	Trp
			485						490					495	
Thr	Ala	Ile	Arg	Lys	Arg	Gly	Gly	Val	Asp	Thr	Asp	Tyr	Glu	Lys	Thr
			500					505					510		
Ile	Arg	Asn	Thr	Asp	Met	Ser	Lys	Glu	Val	Asp	Trp	Ala	Lys	Tyr	Ser
		515					520					525			
Gly	Ser	Thr	Leu	Val	Asp	Ala	Thr	Leu	Phe	Asn	Ile	Arg	Arg	Glu	Arg
		530				535					540				
Arg	Cys	Glu	Phe	Ile	Gly	Glu	Gly	Met	Arg	Trp	Asp	Asp	Leu	Met	Arg
545					550					555					560

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Trp Arg Ala Met Asp Gln Leu Leu Thr Thr Lys Tyr Ile Pro Glu Gly
 565 570 575
 Phe Asn Phe Trp Asp Glu Ala Tyr Asp Asp Tyr Val Ala Met Lys Asn
 580 585 590
 Asp Lys Gly Glu Pro Lys Tyr Lys Ile Val Ser Asp Gly Ser Ser Thr
 595 600 605
 Ala Asn Met Ser Ala Lys Glu Leu Gly Lys Tyr Val Arg Pro Tyr Ser
 610 615 620
 Ile Val Lys Ala Asn Asn Ala Val Phe Asp Gly Tyr Thr Phe Ala Lys
 625 630 635 640
 Ala Tyr Tyr Leu Tyr Pro Val Pro Ile Arg Gln Met Glu Leu Leu Ser
 645 650 655
 Pro Asp Arg Ser Val Asn Asn Ser Val Leu Tyr Gln Asn Pro Tyr Trp
 660 665 670
 Pro Ser Lys Thr Ser Glu Pro Ala Ile Glu
 675 680

<210> 7947

<211> 321

<212> PRT

<213> B.fragilis

<400> 7947

His Thr Cys Leu Leu Lys Ile Leu Ser Phe Trp Gly Leu Cys Gly Tyr
 1 5 10 15
 Phe Phe Val Tyr Leu Ala Ser Gly Phe Val Ala Cys Val Lys Cys Leu
 20 25 30
 Leu Leu Met Arg Ala Ile Phe Ile Phe Val Cys Ile Leu Leu Phe Val
 35 40 45
 Ser Cys Gln Asn Ser Asp Lys Ser Arg Ile Ala His Met Ile Asp Glu
 50 55 60
 Trp Asp Gly Lys Glu Ile Ile Tyr Pro Asp Asp Leu Val Phe Thr Thr
 65 70 75 80
 Met Gly Glu Asp Thr Val Lys Trp Phe Leu Lys Asp Ser Arg Tyr Thr
 85 90 95
 Ile Val Thr Tyr Ala Asp Ser Ile Gly Cys Met Gly Cys Lys Leu Lys
 100 105 110
 Leu Pro Ala Trp Lys Asp Phe Ile Ser Tyr Leu Asp Ser Val Ser Asp
 115 120 125
 His Thr Val Lys Val Ile Phe Ile Leu His Pro Arg Asp Lys Lys Glu
 130 135 140
 Met Val His Leu Leu Glu Tyr Asn Asp Phe Ser Tyr Pro Val Cys Leu
 145 150 155 160
 Asp Ile Lys Gly Ser Phe Asp Lys Ile Asn Lys Ile Pro Ser Asn Leu
 165 170 175
 Ala Phe Gln Thr Phe Leu Leu Asp Asn Arg Asn Lys Val Ile Ala Ile
 180 185 190
 Gly Asn Pro Ile His Asn Pro Asn Val Arg Thr Leu Tyr Leu Asn Leu
 195 200 205
 Ile Leu Ser Asp Ser Ile Cys Glu Ser Arg Asp Leu Ile Gln Thr Lys
 210 215 220
 Ile Ser Leu Pro Glu Thr Ile Asp Met Gly Val Phe Asp Trp Ser Glu
 225 230 235 240
 Glu Lys Glu Ala Met Leu Ile Ile Lys Asn Leu Gly Val Val Ser Leu
 245 250 255
 Thr Val Glu Asn Ile Val Thr Ser Cys Gly Cys Thr Ser Val Glu Tyr
 260 265 270
 Ser Arg Arg Pro Val Ser Leu Lys Asp Ser Leu Val Ile Lys Ile Lys
 275 280 285

Tyr Lys Ala Glu Ser Pro Gly Tyr Phe Asn Lys Asp Ile Ala Ile Tyr
 290 295 300
 Cys Asn Val Pro Ser Ser Pro Val Tyr Val Lys Leu Ser Gly Lys Ala
 305 310 315 320
 Gln

<210> 7948
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 7948

Ile Ile Arg Lys Arg Thr Cys Ile Gly Ile Gly Met Asp Glu Ile Ser
 1 5 10 15
 Ile Ile Gln Ser Asn His Ile Pro Leu Ser Phe Leu Thr Gly Lys Asp
 20 25 30
 Ala Tyr Ser Leu Tyr Asn Lys Gly Trp Gly Tyr Ser Phe Val Tyr Ser
 35 40 45
 Leu Gln Glu Val Arg Asp Ile Tyr Leu Ala Ile Gln Lys Tyr Lys Tyr
 50 55 60
 Ile Asn Leu Gly Gln Phe Thr Asp Glu Tyr Val Ile Pro His Ile Pro
 65 70 75 80
 Asn Val Gly Val Ala Trp Asn Lys Arg Arg Val Leu Glu Ile Leu Asn
 85 90 95
 Ala Leu Val Asn Phe Gly Leu Leu Thr Pro Gln Tyr Glu Leu Thr Asn
 100 105 110
 Thr Val His Leu Phe Glu Asp Tyr Gln Ile Gly Lys Pro Ile Asp Asp
 115 120 125
 Asn Asp Asn Lys Ile Phe Arg Arg Ile Phe Phe Ser Tyr His Arg Phe
 130 135 140
 Arg Asp Phe Ser Ser Leu Tyr Leu Pro Ile Asp Asn Asn Tyr Ser Asn
 145 150 155 160
 Ile Glu Glu Val Leu Leu Asn Asn Ser Met Pro Leu Phe Ser Phe Gly
 165 170 175
 Ser Glu Arg Lys Tyr Thr Asp Ser Phe Phe Lys Thr Phe Lys Asp Asn
 180 185 190
 Pro Asp Ile Tyr Tyr Ile Pro Glu Tyr Asn Lys Asp Asn Glu Lys Asn
 195 200 205
 Ser Gly Cys Lys Met Phe Trp Asp Val Phe Ile Ser Trp Gly Val Gln
 210 215 220
 Leu Lys Val Met Glu Lys Phe Asn Ser Ser Ile Phe Asn Tyr Lys Leu
 225 230 235 240
 Ser Asn Gly Lys Thr Phe Ser Cys Ser Tyr Phe Leu Ser Ser Asp Asn
 245 250 255
 Leu Leu Met Pro Ser Leu Ile Asp Phe Ile Lys Asn Asn Tyr Pro Glu
 260 265 270
 Arg Lys Asn Ile Asp Leu Ser Leu Leu Ile Phe Thr Leu Cys Thr Ile
 275 280 285
 Phe Arg Lys Ser Leu Ser Ser Thr Lys Asp Tyr Ile Ile Glu Glu Tyr
 290 295 300
 Lys Arg Asn Lys Glu Tyr Ile Ser Leu Val Arg Thr Ser Glu Val Phe
 305 310 315 320
 Ile Lys Ser Gly Lys Phe Ala Glu Asn Ser Thr Val Ile Tyr Pro Lys
 325 330 335
 Tyr Lys Asp Ser Phe Ile Ser His Leu Ile Ile Arg Leu
 340 345

<210> 7949

<211> 357
 <212> PRT
 <213> B.fragilis

<400> 7949

Arg Met Arg Lys Ile Gly Leu Leu Phe Ile Thr Ile Phe Cys Leu Leu
 1 5 10 15
 Ala Cys Lys Asn Ser Ser Arg Ile Ser Leu Glu Gly Glu Ile Lys
 20 25 30
 Gly Leu Thr Asn Asp Thr Leu Tyr Leu Tyr Gly Thr Asp Ala Leu Tyr
 35 40 45
 Asp Arg Ile Asp Thr Ile Tyr Ala Glu Lys Gly Lys Phe Ser Tyr Asn
 50 55 60
 Leu Asn Ile Asp Ser Thr Val Ile Asp Thr Leu Thr Thr Ala Val Leu
 65 70 75 80
 Leu Ile Asn Gly His Val Glu Tyr Pro Val Phe Leu Asp Lys Gly Asn
 85 90 95
 Gln Ile Thr Ile Lys Gly Asn Ile Asp Asp Leu Ser Tyr Leu Asp Ile
 100 105 110
 Asn Gly Asn Glu Pro Asn Thr Ser Leu Ser Leu Phe Met Lys Glu Gln
 115 120 125
 Arg Gly Leu Gly Ser Ala Ser Asp Lys Met Met Gln Glu Lys Ala Glu
 130 135 140
 Thr Phe Ile Arg Gln His Asn Ser Ser Leu Ala Ser Val Tyr Leu Leu
 145 150 155 160
 Asp Lys Tyr Phe Val Gln Thr Pro Gln Pro Asp Tyr Ile Lys Ile Lys
 165 170 175
 Glu Ile Thr Glu Ala Met Thr Gly Ala Leu Leu Asp Arg Pro Tyr Ile
 180 185 190
 Glu Asn Ile Ser Asp Tyr Ile Asp Gln Leu Glu Lys Val Thr Val Gly
 195 200 205
 Lys Ser Ala Pro Tyr Phe Ser Leu Pro Asn Glu Lys Gly Glu Lys Leu
 210 215 220
 Ser Arg Ser Ala Glu Arg Phe Arg Asn Arg Tyr Leu Leu Leu Asn Phe
 225 230 235 240
 Trp Ala Ser Trp Cys Asp Pro Gln Pro Glu Thr Asn Ala Glu Leu Lys
 245 250 255
 Arg Leu Asn Lys Glu Tyr Lys Lys Asn Lys Asn Phe Val Met Leu Gly
 260 265 270
 Ile Ser Leu Asp Ile Asp Arg Glu Ala Trp Glu Thr Ala Ile Lys Lys
 275 280 285
 Asp Thr Leu Ser Trp Asp Gln Val Cys Asp Phe Thr Gly Leu Ser Ser
 290 295 300
 Glu Thr Ala Lys Gln Tyr Ala Ile Leu Thr Leu Pro Thr Asn Ile Leu
 305 310 315 320
 Leu Ser Pro Thr Gly Lys Ile Leu Ala Arg Asp Ile Gln Gly Glu Ala
 325 330 335
 Leu Thr Asp Lys Leu Lys Glu Leu Leu Lys Thr Glu Glu Lys Lys Pro
 340 345 350
 Gly Lys Ser Ile Arg
 355

<210> 7950
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 7950

Ile Val Gly Lys Ser Ser Cys Ser Ser Val Ala Ser Arg Leu Asn Ile

1 5 10 15
 Arg Ser Lys Thr Ile Ser Cys Thr Ser Ser Gly Arg Gln Phe Gly Leu
 20 25 30
 Ser Thr Leu Leu Ile Thr Thr Ile Gly Phe Asn Pro Ile Ser Lys Ala
 35 40 45
 Phe Cys Ser Thr Lys Arg Val Cys Gly Ile Gly Pro Ser Lys Ala Ser
 50 55 60
 Thr Asn Arg Met His Pro Ser Ala Met Leu Ser Thr Arg Ser Thr Ser
 65 70 75 80
 Pro Pro Lys Ser Leu Cys Pro Gly Val Ser Ile Ile Leu Ile Leu Val
 85 90 95
 Pro Leu

<210> 7951
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 7951
 Lys Asp Met Lys Gln Glu Tyr Leu Ile Glu Leu Val Asn Cys Ser Thr
 1 5 10 15
 Glu Asp Ser Ile Met Leu Gln Val Asn Glu Thr Asp Thr Ser Val Lys
 20 25 30
 Ala Met Lys Ser Trp Ile Met Gln Gln Glu Thr Ile Gln Pro Cys Lys
 35 40 45
 Lys His His Leu His Ile Ile Gly Asn Lys Thr Cys Asp Leu Glu Leu
 50 55 60
 Glu Asp Val Tyr Thr Leu Cys Lys Ile Ile Gln Ala Val Val Ala Glu
 65 70 75 80
 Pro Leu Ser Trp Asp Ile Ile Glu Arg Val Leu Ser Glu Lys Asp Ser
 85 90 95
 Asn Leu Val Ala Ser Leu Leu Leu Tyr
 100 105

<210> 7952
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 7952
 Arg Leu Met Asn Glu Lys Glu Ala Ile Ile Lys Leu Lys Thr Cys Asn
 1 5 10 15
 Asp Lys Ala Ala Phe Ala Phe Leu Tyr Arg Ser Tyr Trp Ala Lys Val
 20 25 30
 Tyr Asn Phe Thr Arg Leu Tyr Ile Thr Ser Ala Val Asp Val Glu Glu
 35 40 45
 Ile Val Gln Glu Val Phe Ile Lys Ile Trp Glu Asn Arg Glu Ala Leu
 50 55 60
 Asp Glu Glu Gln Asn Phe Ala Gly Tyr Leu Phe Ile Thr Met Arg Asn
 65 70 75 80
 Leu Val Phe Asn Arg Ser Arg Lys Asn Leu Asn Glu Pro Phe Tyr Gln
 85 90 95
 Leu Ser Val Ile Glu Ala Val Glu Glu Ser Tyr Asp Ile Glu Glu Glu
 100 105 110
 Leu Asp Ala Ala Asn Leu Arg Thr His Ile Ser Ala Leu Ile Ser Met
 115 120 125
 Leu Pro Pro Arg Gln Gln Glu Val Phe Arg Leu Ser Arg Asp Glu Glu
 130 135 140

Leu	Ser	Tyr	Arg	Glu	Ile	Ala	Glu	Arg	Leu	Gln	Ile	Ser	Glu	Arg	Thr
145					150					155					160
Val	Glu	His	His	Ile	Ser	Asp	Ala	Leu	Lys	Phe	Leu	Arg	Lys	Asn	Ile
				165					170					175	
Lys	Leu	Tyr	Leu	Leu	Phe	Leu	Ser	Leu							
			180					185							

<210> 7953

<211> 209

<212> PRT

<213> B.fragilis

<400> 7953

Glu	Ile	Met	Lys	Leu	Asn	Tyr	Leu	Leu	Ile	Leu	Ile	Ile	Cys	Val	Leu
1				5					10					15	
Leu	Leu	Cys	Phe	Asn	Leu	Tyr	Ile	Phe	Lys	Gln	Asn	Ser	Ala	Ser	Asp
			20					25					30		
Arg	Met	Gln	Asp	Thr	Ile	Ile	Arg	Leu	Ala	Tyr	Glu	Asp	Ser	Ile	Lys
			35				40					45			
Glu	Ser	Ser	His	Arg	Ile	Glu	Arg	Glu	Ile	Arg	Asn	Tyr	Glu	Leu	Arg
	50					55					60				
Thr	Asn	Gly	Lys	Val	Met	Asn	Pro	Leu	Phe	Glu	Val	Phe	Asp	Thr	Asn
65					70					75					80
Gly	Asp	Lys	Arg	Thr	Leu	Ser	Lys	Ile	Ile	Asp	Gly	Asn	Lys	Phe	Val
				85					90					95	
Leu	Arg	Tyr	Ser	Glu	Leu	Asn	Cys	Asn	Thr	Cys	Val	Asn	Lys	Gln	Ile
				100				105						110	
Glu	Leu	Leu	Asn	Leu	Tyr	Val	Asp	Ser	Ile	Gly	Val	Asp	His	Ile	Ile
			115				120					125			
Leu	Leu	Thr	Asn	Tyr	Asp	Ser	Asn	Phe	Tyr	Met	Lys	Gln	Phe	Lys	Arg
			130				135				140				
Ile	Ser	Lys	Ile	Lys	Tyr	Pro	Ile	Phe	Asn	Ile	Gly	Ala	Asn	Leu	Asn
145					150					155					160
Glu	Cys	Ile	Pro	Asp	Ile	Glu	Arg	Pro	Tyr	Phe	Phe	Ile	Ile	Asp	Ser
				165					170					175	
Asn	Phe	Arg	Ile	Asn	Ser	Val	Tyr	Val	Pro	Gln	Ile	Asp	Glu	Ser	Asn
			180				185						190		
Val	Thr	Lys	Thr	Tyr	Phe	His	Arg	Ile	Leu	Gln	Tyr	Tyr	Phe	Asp	Ile
			195				200					205			

Pro

<210> 7954

<211> 291

<212> PRT

<213> B.fragilis

<400> 7954

Ser	Lys	Met	Lys	Lys	Val	Ser	Ile	Leu	Ala	Ala	Val	Ala	Met	Ala	Thr
1				5					10					15	
Gly	Leu	Ala	Ser	Cys	Thr	Ala	Gln	Ala	Pro	Lys	Ala	Thr	Leu	Lys	Thr
			20					25					30		
Asp	Val	Asp	Ser	Leu	Ser	Tyr	Ala	Ile	Gly	Ile	Ser	Gln	Thr	Gln	Gly
			35				40					45			
Leu	Lys	Asp	Tyr	Leu	Ser	Gln	Arg	Met	Glu	Met	Asp	Thr	Thr	Tyr	Met
	50					55					60				
Ala	Asp	Phe	Leu	Lys	Gly	Val	Asn	Asp	Ala	Ala	Asn	Lys	Thr	Ser	Lys
65					70					75					80
Lys	Asp	Gln	Ala	Tyr	Leu	Leu	Gly	Leu	Gln	Ile	Gly	Ser	Gln	Met	Ala

[illegible]

<400> 7955

Arg	Lys	Met	Lys	Ile	Lys	Ile	Leu	Phe	Phe	Ile	Cys	Ile	Val	Leu	Ser
1				5				10						15	
Ser	Ile	Asp	Ile	Thr	Asn	Ala	Gln	Asn	Ile	Val	Thr	Lys	Lys	Thr	Tyr
			20					25					30		
Trp	Asp	Trp	Gly	Asn	Ser	Arg	Leu	His	Glu	Ile	Phe	Thr	Val	Ile	Ala
		35					40					45			
Gly	Thr	Gly	Thr	Arg	His	Gly	Ser	Tyr	Lys	Glu	Tyr	Asp	Lys	Asn	Gly
	50					55					60				
Met	Leu	Leu	Ile	Ser	Ala	Asn	Tyr	Asn	His	Gly	Ala	Leu	His	Gly	Leu
65					70					75					80
Cys	Val	Gly	Tyr	Phe	Gly	Thr	Pro	Gln	Asn	Tyr	Ile	Ser	Lys	Ser	Thr
				85					90					95	
Asn	Tyr	Leu	Asn	Gly	Glu	Lys	Asn	Gly	Val	Glu	Lys	Asn	Tyr	Asn	Leu
			100					105					110		
Gly	Ser	Ser	Gly	His	Tyr	Leu	Ile	Glu	Glu	Cys	Val	Tyr	Lys	Lys	Asp
		115					120					125			
Glu	Met	Ile	Glu	Lys	Thr	Ser	Tyr	Tyr	Thr	Asp	Val	Lys	Tyr	Lys	Gly
	130					135					140				
Arg	Lys	Lys	Ser	His	Ala	Lys	Leu	Val	Asp	Asp	Lys	Gln	Phe	Asn	Thr
145					150					155					160
Asn	Trp	Tyr	Gln	Asn	Gly	Gln	Ile	Glu	Tyr	Glu	Gly	Val	Leu	Gln	Val
			165						170					175	
Thr	Pro	Gly	Asn	Tyr	Gly	Asn	Val	Thr	Thr	Pro	Ile	Gln	Tyr	Thr	Arg
			180					185					190		
Tyr	Ser	Glu	Ala	Gly	Ala	Leu	Met	Glu	Lys	Leu	Asn	Asp	Asn	Ile	Ile

195 200 205
 Ser Phe Tyr Ala Glu Asp Gly Lys Thr Ile Thr Gln Lys Glu Asn Leu
 210 215 220
 Ser Thr Asp Val Ile Glu Tyr Tyr Asp Asn Gly Thr Leu Thr Lys Ser
 225 230 235 240
 Ile Lys Ile Leu Lys Glu Asp Gly Asp Glu Tyr Tyr Glu Val Ser Leu
 245 250 255
 Tyr Lys Asn Asn Ser Ile Tyr Ser Lys Lys Val Val Asp Arg Asn Gly
 260 265 270
 Asn Asp Ala Glu Leu Ile Lys Lys Glu Lys Gln Leu Ala Leu Gln Tyr
 275 280 285
 Asp Ser Leu Tyr Asn Arg Leu Lys Glu Met Leu His Ser Asn Val Ser
 290 295 300
 Met Asn Ile Thr Lys Met Val Phe Ala Asn Pro Asp Arg Val Tyr Cys
 305 310 315 320
 Arg Lys Gly Gln Tyr Glu Ser Ser Gly Lys Phe Ser Ala Leu Glu Ala
 325 330 335
 Ile Ile Arg Thr His Glu Lys Glu Leu Asp Asp Val Val Arg Gln Arg
 340 345 350
 Asn Glu Tyr Thr Glu Arg Gly Phe Lys Arg Asn Asp Gly Lys Tyr Tyr
 355 360 365
 Lys Ser Val Glu Gln Ile Lys Glu Tyr Ile Asp Lys Ile Ser Gln Asn
 370 375 380
 Phe Met Gln Lys Tyr Asp Thr Leu Ser Val Met Lys Lys Ile Ala Glu
 385 390 395 400
 Gln Ile Asn Asp Asp Leu Tyr Tyr Ile Glu Cys Ser Tyr Thr Tyr Tyr
 405 410 415
 Thr Gly Gln Gln Gly Tyr Lys Asp Asn Val Pro Gly Lys His Lys Asn
 420 425 430
 Ala Tyr Lys Ala Tyr Ile Ser Thr Thr Glu Tyr Leu Thr Ser Asn Met
 435 440 445
 Glu Gly Lys Asn Leu Ser Glu Thr Leu Thr Met Leu Gln Gln Tyr Ala
 450 455 460
 Thr Ile Ser Ser Lys Met Arg Lys Trp Tyr Asn Met Lys Ile Thr Pro
 465 470 475 480
 Ile Glu Lys Leu Phe Lys Lys Thr Glu Ile Pro Glu Thr Gln Leu Asn
 485 490 495
 Ile Phe Met Asn Asn Asp Val Glu
 500

<210> 7956

<211> 466

<212> PRT

<213> B.fragilis

<400> 7956

Phe Leu Met Lys His Phe Thr Gly Ile Leu Phe Leu Leu Leu Leu Cys
 1 5 10 15
 Phe Ser Cys Thr Pro Val His Asp Ala Pro Leu Glu Gln Ala Leu Thr
 20 25 30
 Leu Ala Gly Asp Asn Arg Lys Glu Leu Gln Gln Val Leu Gly His Tyr
 35 40 45
 Glu Gly Asp Ser Leu Lys His Lys Ala Ala Cys Phe Leu Ile Glu Asn
 50 55 60
 Met Ile Gly Lys Gly Thr Ile Arg Tyr Leu Leu Arg Glu Ser Asp Ser
 65 70 75 80
 Cys Tyr Ile Arg Gln Glu Pro Glu Pro Asp Leu Thr Cys Ile Thr Ala
 85 90 95
 Asp Tyr Leu Ile Glu Asn Ile Asp Leu Ala Phe Glu Val Trp Gln Lys

100 105 110
 Tyr Pro Trp Cys Lys Gln Leu Ser Phe Arg Glu Phe Cys Arg Asn Ile
 115 120 125
 Leu Pro Tyr Arg Leu Lys Gln Glu Pro Leu Asp Arg Trp Arg Ser Tyr
 130 135 140
 Tyr Tyr Thr Arg Tyr Lys Met Thr Val Asp Ser Leu Ala Arg Ala Gly
 145 150 155 160
 Ala Thr Met Arg Glu Ile Val Phe Phe Phe Asn Ser Arg His Gly Lys
 165 170 175
 Lys Tyr Leu His Asp Ala Ala Lys Ile Pro Gly Asp Phe Ser Ile Glu
 180 185 190
 Leu Ile Glu Lys Leu Gly Gly Gly Thr Cys Asp His Leu Ala Leu Asn
 195 200 205
 Ala Val Gln Leu Met Arg Ala Val Gly Ile Pro Leu Asn Leu Asp Ile
 210 215 220
 Leu Pro Tyr His Gly Lys Val Asn Gly Gly His Ala Tyr Asn Ser Phe
 225 230 235 240
 Thr Asp Glu Asn Gly Lys Phe Phe Tyr Phe Ser Pro Tyr Glu Arg Glu
 245 250 255
 Pro Glu Arg Asn Gln Trp Ile Ala Pro Leu Ile Gln Arg Val Cys Tyr
 260 265 270
 Glu Arg Gln Pro Glu Pro Lys Ile Gly Arg Asn Arg Trp Asn Ala Gln
 275 280 285
 Leu Val Asn Arg Leu Leu Lys Glu Val Thr Ala Glu Tyr Tyr Leu Ser
 290 295 300
 Asp Ser Val Arg Leu Pro Val His Thr Ser Asp Thr Val Ala Tyr Ile
 305 310 315 320
 Ala Thr Phe Asn Arg Gly Ala Phe Lys Val Val Ser Gln Gly Arg Val
 325 330 335
 Glu Ser Asn Ser Val Leu His Arg Val Leu Pro Tyr Gly Leu Leu Tyr
 340 345 350
 Phe Gln Met Ala Asp Lys Lys Gly Lys Leu Val Pro Thr Gly Ser Pro
 355 360 365
 Phe Val Met Thr Pro Asp Ser Ile His Phe Ile Thr Pro Ile Arg Gln
 370 375 380
 Thr Thr Val Leu Asn Gly Ile Leu Thr Tyr Asp Val Lys Arg Val Leu
 385 390 395 400
 Glu Leu Gly Asp Glu Ala Tyr Thr Leu Tyr Tyr Trp Lys Asp Gly Trp
 405 410 415
 Gln Pro Val Lys Glu Val Thr Ser Lys Asp Ser Arg Thr Leu Asp Phe
 420 425 430
 Gly Glu Val Pro Val Arg Ser Leu Phe Leu Val Cys Gly Asn Thr Tyr
 435 440 445
 Met Gly Arg Met Gln Arg Pro Phe Leu Leu Glu Asp Gly Lys Pro Val
 450 455 460
 Tyr Tyr
 465

<210> 7957

<211> 119

<212> PRT

<213> B.fragilis

<400> 7957

Thr Tyr Lys Asn Met Asn Asn Lys Asn Ile Phe Thr Gln Asn Cys Val
 1 5 10 15
 Lys Tyr Ser Leu Lys Asn Ala Thr Gln Glu Phe Ser Leu Ile Arg Leu
 20 25 30
 Arg Met Thr Ile Gly Gly Val Arg Phe Ser Tyr Cys Leu Pro Val Glu

	35		40		45														
Tyr	Lys	Ile	Lys	Ser	Ser	Phe	Trp	Asp	Lys	Glu	Ala	Gly	Lys	Ala	Ile				
	50					55					60								
Glu	Asp	Ala	Lys	Arg	Asn	Thr	Glu	Leu	Lys	Gly	Asn	Pro	Met	Leu	Gln				
65					70					75					80				
Val	Ala	Leu	Arg	Asn	Ile	Asn	Lys	Glu	Ile	Glu	Lys	Thr	Thr	Asn	Thr				
				85					90					95					
Leu	Ile	Lys	Gln	Lys	Pro	Gly	Tyr	Asn	Pro	Asp	Ser	Gln	Pro	Asp	Lys				
			100					105					110						
Arg	Arg	Val	Asp	Lys	Gly	Thr													
			115																

<210> 7958

<211> 370

<212> PRT

<213> B.fragilis

<400> 7958

Asn	Ile	Asn	Leu	Lys	Thr	Asn	Ile	Met	Arg	Lys	Ala	Leu	Leu	Thr	Val				
1			5					10						15					
Ile	Ser	Phe	Thr	Leu	Cys	Leu	Tyr	Ile	Thr	Ser	Cys	Ser	Gln	Ser	Ser				
			20					25					30						
Lys	Pro	Glu	Lys	Ala	Arg	Thr	Ile	Glu	Thr	Ile	Ala	Thr	Asp	Ala	Gln				
			35					40					45						
Gln	Thr	Leu	Ser	Phe	Asn	His	Glu	Pro	Leu	Ser	Ile	Asp	Pro	Ile	Gly				
			50			55					60								
Ile	Gly	Asp	Ile	Ile	Val	Thr	Asp	Thr	Phe	Leu	Ile	Leu	Ala	Leu	Asn				
65					70					75					80				
Lys	Glu	Glu	Asn	Met	Leu	His	Val	Tyr	Asn	Leu	Pro	His	Leu	Gln	Phe				
				85					90					95					
Leu	Gly	Ser	Phe	Gln	Lys	Ile	Gly	Asn	Gly	Pro	Asp	Glu	Val	Ile	Leu				
			100					105					110						
Pro	Ser	Ala	Phe	Thr	Gln	Trp	Phe	Asn	Lys	Asp	Gly	Gln	Ile	Gln	Leu				
			115				120					125							
Val	Met	Arg	Ser	Tyr	Gln	Lys	Phe	Thr	Gly	Leu	Leu	Asn	Ile	Ser	Lys				
	130					135					140								
Ser	Leu	Ile	Glu	Asn	Lys	Ala	Ile	Tyr	Asp	Asn	Lys	Tyr	Thr	Tyr	Asn				
145					150					155					160				
Ala	Pro	Lys	Gly	Lys	Asn	Ser	Phe	Gln	Gln	Ser	Ser	Val	Ser	Tyr	Leu				
				165					170					175					
Leu	Gly	Asp	Ser	Ile	Phe	Leu	Ile	Asn	Arg	Ser	Ile	Ile	Met	Arg	Pro				
			180					185					190						
Gln	Asp	Asn	Gln	Asn	Asp	Phe	Phe	Glu	Val	Tyr	Asp	Tyr	Lys	Asn	Asp				
			195				200					205							
Ser	Ile	Leu	Arg	Ser	Phe	Tyr	Ala	Ser	Asn	Phe	Pro	Lys	Glu	Leu	Leu				
	210					215					220								
Glu	His	His	Gly	Arg	Asp	Gln	Ala	Phe	Gln	Lys	Asp	Ile	Ala	Ile	Ser				
225					230					235					240				
Asn	Asp	Cys	Lys	Lys	Met	Val	Ile	Ala	Tyr	Arg	Phe	Leu	Asn	Met	Ile				
				245					250					255					
Ser	Ile	Val	Asn	Ile	Glu	Lys	Glu	Glu	Ile	Asn	Asn	Leu	Phe	Thr	Asp				
			260					265					270						
Gly	Asn	Lys	Leu	Asn	Trp	Glu	Gln	Val	Ile	Glu	Gly	Thr	Pro	Lys	Pro				
			275				280					285							
Tyr	Tyr	Thr	Lys	Val	His	Cys	Asn	Asn	Ala	Tyr	Ile	Trp	Ala	Met	Ala				
	290					295					300								
Ile	Glu	Gly	Glu	Asp	Pro	Ser	Thr	Phe	Arg	Ser	Arg	Leu	Asp	Ile	Phe				
305					310					315					320				
Asp	Trp	Lys	Gly	Asn	Tyr	Leu	Cys	Lys	Ala	His	Leu	Asp	Lys	Trp	Val				

325 330 335
 Ser Ser Phe Ser Ile Asp Glu Arg Asn Gln Thr Met Tyr Ala Val Thr
 340 345 350
 Ala Asp Asp Met Leu Val Arg Tyr Asn Ile Lys Glu Leu Leu Asp Gln
 355 360 365
 Leu Pro
 370

<210> 7959
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 7959
 Ile Val Tyr Asp Asn Tyr Pro Lys Tyr Asp Ser Phe Val Arg Met Lys
 1 5 10 15
 Trp Asn Val Leu Leu Tyr Gly Leu Leu Phe Ser Gly Leu Gly Ile Phe
 20 25 30
 Ser Tyr Leu Leu Leu Val Asn Tyr Thr Glu Leu Thr Pro Lys Val Ala
 35 40 45
 Asp Val Leu Tyr Ser Lys Gly Ala Phe Val Phe Phe Ile Thr Ala Phe
 50 55 60
 Asn Val Leu Gly Tyr Ser Thr Leu Arg Ile Ser Ser Trp Ile Asn Thr
 65 70 75 80
 Gln Tyr Ala Leu Asn Ile Arg His Arg Trp Lys Ile Ile Val Ile Tyr
 85 90 95
 Val Ala Val Ile Leu Leu Phe Leu Leu Leu Asn Tyr Ser Leu Leu Ile
 100 105 110
 Ala Ala Lys Leu Leu Ala Gly Ile Asp Asn Leu Phe Thr Phe Ser Asn
 115 120 125
 Gly Gly Trp Arg Ile Leu Ile Val Val Trp Leu Val Glu Leu Val Ile
 130 135 140
 Val Gly Leu Leu Leu Ala Asn Arg Ser Ile Gln Asn Asn Leu Lys Leu
 145 150 155 160
 Gln Gln Glu Ala Ala Lys Leu Gln Thr Glu Asn Asp Thr Ala Arg Tyr
 165 170 175
 Ala Ala Leu Gln Ser Gln Leu Asn Pro His Phe Leu Phe Asn Ser Leu
 180 185 190
 Asn Thr Leu Ile Ala Glu Ile Glu Tyr Asn Pro Gly Asn Ala Val His
 195 200 205
 Phe Thr Lys His Leu Ser Ser Val Tyr Arg Tyr Val Leu Gln Cys Gln
 210 215 220
 Asp Lys Thr Leu Val Thr Leu Thr Glu Glu Leu Glu Phe Leu Gln Ser
 225 230 235 240
 Tyr Leu Phe Leu His Lys Val Arg Leu Gly Asp Cys Ile Ser Cys Asn
 245 250 255
 Cys Cys Ile Ala Ser Gly Tyr Thr Ser Cys Met Leu Pro Pro Leu Thr
 260 265 270
 Leu Gln Leu Leu Ala Glu Asn Val Ile Asn His Asn Ser Ile Thr Leu
 275 280 285
 Ser Lys Pro Met Lys Ile Asp Ile Arg Leu Glu Glu Tyr Leu Ala
 290 295 300
 Val Ser Asn Pro Ile Gln Pro Lys Lys Ser His Glu Ser Pro Gly Val
 305 310 315 320
 Gly Leu Lys Asn Leu Ser Asn Arg Cys Gln Leu Met Leu Gly Lys Glu
 325 330 335
 Ile Ile Val His Asn Asp Glu Lys Val Phe Ile Val Lys Val Pro Leu
 340 345 350
 Leu Tyr Glu

355

<210> 7960
 <211> 380
 <212> PRT
 <213> B.fragilis

<400> 7960

Arg	Leu	Asn	Glu	Cys	Arg	Phe	Lys	Arg	His	Leu	Ser	Lys	Arg	Lys	Tyr
1				5					10					15	
Gln	Lys	Gly	Arg	Ile	Gln	Ile	Phe	Lys	Thr	Val	Asn	Thr	Ile	Phe	Tyr
			20					25					30		
Thr	Ser	Met	Asn	Thr	Ile	Lys	Ile	Asp	Gln	Gln	Leu	Lys	Arg	Ile	Gln
		35					40					45			
Ile	Lys	Glu	Phe	Glu	Ile	Glu	Asn	Glu	Ile	Val	Phe	Asn	Phe	Phe	Asn
	50					55					60				
Arg	Ile	Ser	Ala	Ser	Glu	Arg	Asp	Asp	Lys	Leu	Val	Gln	Ala	Ile	Tyr
65					70					75					80
Ile	Gly	Ile	Leu	Ala	Leu	Met	Glu	Asp	Arg	Phe	Ser	Ser	Phe	Leu	Ser
				85					90					95	
Lys	Thr	Ser	Asn	Glu	Leu	Gly	Ala	Glu	Leu	Glu	Ser	Leu	Lys	Met	Ile
			100					105						110	
Phe	Asp	Met	Lys	Lys	Glu	Val	Phe	Tyr	Lys	Ser	Ser	Ile	Lys	Gly	Ile
	115						120						125		
Leu	Ala	Glu	Asn	Asp	Ile	Ala	Glu	Phe	Leu	Ile	Asp	His	Phe	Lys	Asp
	130					135					140				
Lys	Lys	Ile	Ser	Asp	Glu	Val	Phe	Leu	Thr	Gly	Asn	Ile	Ala	Gly	Lys
145					150					155					160
Leu	Ser	Lys	Asn	Lys	Thr	Gly	Asp	Ile	Val	Cys	Cys	Ile	Glu	Gly	Lys
				165					170					175	
Glu	Glu	Gln	Lys	Ile	Val	Ile	Glu	Cys	Lys	Phe	Asp	Lys	Ser	Ile	Arg
			180					185						190	
Leu	Gly	Asp	Ile	Glu	Ser	Lys	Asp	Ile	Phe	Thr	Arg	Lys	Thr	Asp	Thr
		195					200						205		
Ala	Trp	Ser	Gln	Leu	Leu	Glu	Ala	Gln	Val	Asn	Arg	Glu	Ala	Gln	Val
	210					215						220			
Gly	Ile	Ile	Val	Leu	Asp	Ile	Ser	Leu	Val	Asp	Asn	Ser	Val	Phe	Lys
225					230					235					240
Lys	Tyr	Glu	Asn	Ile	Gly	Tyr	Ile	Pro	Asn	Val	Gly	Phe	Ile	Ala	Ile
				245					250					255	
Ile	Asp	Ser	Gln	Lys	Gly	Asp	Tyr	Ser	Asn	Leu	Ser	Ile	Ala	Tyr	Phe
			260					265					270		
Leu	Ala	Arg	Asp	Ile	Ile	Leu	Asn	Ser	His	Lys	Val	Glu	Phe	Asn	Lys
		275					280						285		
Asp	Ile	Leu	Thr	Ile	Ile	Val	Gly	Arg	Ile	Ile	Lys	Asp	Ile	Asn	Glu
	290					295					300				
Ile	Lys	Thr	Ile	Lys	Ser	Cys	Val	Ile	Asn	Asn	Ile	Glu	Asn	Asn	Lys
305					310					315					320
Ile	Ile	Leu	Arg	Gln	Leu	Glu	Lys	Ser	Met	Leu	Leu	Met	Glu	Phe	Asn
				325				330						335	
Gln	Glu	Tyr	Leu	Ile	Lys	Phe	Leu	Lys	Asp	Gly	Thr	Leu	Thr	Lys	Glu
			340					345					350		
Asp	Leu	Leu	Glu	Phe	Tyr	Gln	Gly	Glu	Thr	Ile	Lys	Glu	Arg	Tyr	Lys
	355						360					365			
Ile	Ile	Glu	Lys	Glu	Ile	Asp	Asn	Glu	Phe	Ser	Ser				
	370					375					380				

<210> 7961
 <211> 384

<212> PRT

<213> B.fragilis

<400> 7961

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Thr Glu Cys Glu Ile Ala Asn Cys Met Glu Glu Asn Ser Ile Lys Ile
1      5      10      15
His Lys Trp Leu Tyr Pro Ala Ser Trp Leu Tyr Gly Ala Gly Val Ala
20      25      30
Leu Arg Asn Lys Leu Phe Asp Trp Gly Lys Leu Gln Ser Lys Ser Phe
35      40      45
Asn Val Pro Ile Ile Cys Ile Gly Asn Ile Ala Val Gly Gly Thr Gly
50      55      60
Lys Thr Pro His Thr Glu Tyr Leu Ile Lys Leu Leu His Asp Glu Phe
65      70      75      80
Gln Val Ala Val Leu Ser Arg Gly Tyr Lys Arg His Thr Lys Gly Phe
85      90      95
Val Leu Ser Thr Ala Glu Ser Asp Ala Arg Ser Ile Gly Asp Glu Pro
100     105     110
Tyr Gln Ile Gln Ser Lys Phe Ser Asp Ile Arg Val Ala Val Asp Glu
115     120     125
Asp Arg Cys His Gly Ile Glu Arg Leu Leu Thr Leu Lys Glu Pro Pro
130     135     140
Val Glu Val Ile Leu Leu Asp Asp Ala Phe Gln His Arg Tyr Val Lys
145     150     155     160
Ala Gly Leu Asn Ile Leu Leu Thr Asp Tyr His Arg Leu Phe Cys Asp
165     170     175
Asp Thr Leu Met Pro Ala Gly Arg Leu Arg Glu Ser Ala Gln Gly Lys
180     185     190
Asn Arg Ala Gln Ile Val Ile Val Thr Lys Cys Pro Pro Asp Ile Lys
195     200     205
Pro Ile Asp Tyr Asn Ile Ile Thr Lys Arg Leu Asn Leu Phe Pro Tyr
210     215     220
Gln Gln Leu Tyr Phe Ser Ser Phe Arg Tyr Gly Asn Leu Arg Ala Val
225     230     235     240
Phe Pro Asp Cys Ala Thr Val Gln Glu Arg Lys Leu Ser Ser Leu Gln
245     250     255
Thr Glu Glu Gln Ile Leu Leu Ile Thr Gly Ile Ala Ser Pro Asp Thr
260     265     270
Ile Ile Arg Glu Leu Glu Ile His Thr Arg Asn Ile Asp Leu Leu Ala
275     280     285
Phe Ser Asp His His Asn Phe Ser Gln Arg Asp Leu Ala Gln Ile Lys
290     295     300
Glu Arg Phe Gly Lys Leu Arg Lys Gly Gln Arg Leu Ile Val Thr Thr
305     310     315     320
Glu Lys Asp Ala Thr Arg Leu Ile Cys His Gln Glu Leu Asp Glu Gly
325     330     335
Leu Lys Pro Phe Ile Tyr Ala Leu Pro Ile Glu Val Glu Ile Leu Gln
340     345     350
Asn Gln Gln Asp Asn Phe Asn Gln His Ile Ile Gly Tyr Val Arg Glu
355     360     365
Asn Thr Arg Asn Gly Ser Leu Pro Glu Arg Lys Asp Ala His Lys Ser
370     375     380

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<210> 7962

<211> 1087

<212> PRT

<213> B.fragilis

<400> 7962

Cys Met Thr Glu Lys Thr Asn Leu Phe Pro Asn Leu Ile Arg Phe Arg
 1 5 10 15
 Glu Thr Asn Arg Leu Lys Met Ala Ile Ala Ala Ser Ile Met Leu Trp
 20 25 30
 Cys Ala Thr Pro Gln Gln Ala Ala Asp Thr Tyr Glu Lys His Glu
 35 40 45
 Ile Ala Ser Val Gln Gln Gln Lys Val Lys Thr Thr Gly Thr Val Leu
 50 55 60
 Asp Gln Asn Gly Glu Ala Met Ile Gly Val Ser Val Lys Val Lys Asp
 65 70 75 80
 Asn Ala Thr Met Gly Thr Ile Thr Asp Leu Glu Gly Lys Phe Ser Ile
 85 90 95
 Asp Ala Pro Lys Gly Ala Thr Leu Glu Ile Ser Tyr Ile Gly Tyr Lys
 100 105 110
 Thr Val Thr Val Lys Ala Glu Gly Thr Ala Leu His Ile Thr Met Lys
 115 120 125
 Glu Asp Ala Glu Val Leu Asp Glu Val Val Ile Val Gly Tyr Gly Ser
 130 135 140
 Gln Lys Lys Val Asn Val Thr Gly Ala Val Gly Met Val Asn Ser Glu
 145 150 155 160
 Val Leu Glu Ala Arg Pro Val Gln Asn Val Ser Gln Ala Leu Gln Gly
 165 170 175
 Val Val Pro Gly Leu Asn Leu Ser Val Gly Asn Ser Gly Gly Ala Leu
 180 185 190
 Asp Ser Ser Met Ser Ile Asn Ile Arg Gly Ala Gly Thr Ile Gly Asp
 195 200 205
 Gly Ser Gly Ser Ser Pro Leu Ile Leu Ile Asp Gly Ile Glu Gly Asp
 210 215 220
 Leu Asn Ser Val Asn Pro Asn Asp Ile Glu Asn Val Ser Val Leu Lys
 225 230 235 240
 Asp Ala Ala Ser Ala Ser Ile Tyr Gly Ala Arg Ala Ala Phe Gly Val
 245 250 255
 Ile Leu Val Thr Thr Lys Ser Gly Lys Ser Gly Lys Ala Lys Val Ser
 260 265 270
 Tyr Asn Gly Asn Val Arg Phe Ser Asp Ala Leu Cys Val Pro Glu Met
 275 280 285
 Met Asp Ser Tyr Gln Phe Ala Leu Tyr Phe Asn Arg Ala Ala Glu Asn
 290 295 300
 Ala Gly Asp Ser Gly Pro Phe Ser Gln Glu Ala Leu Asp Arg Ile Leu
 305 310 315 320
 Ala Tyr Gln Ala Gly Thr Leu Lys Glu Thr Met Thr Met Asn Glu Gln
 325 330 335
 Thr Arg Lys Trp Gln Ala Tyr Gly Gly Ala Asn Ala Asn Thr Asp Trp
 340 345 350
 Phe Lys Glu Phe Tyr Asn Asp Trp Val Pro Ser Gln Glu His Ser Leu
 355 360 365
 Ser Ile Ser Gly Gly Ser Glu Lys Thr Gln Tyr Thr Ile Ser Gly Ser
 370 375 380
 Phe Leu Asp Gln Asn Gly Leu Leu Arg His Gly Ser Asp Asn Phe Gln
 385 390 395 400
 Arg Tyr Thr Met Asn Gly Lys Ile Thr Ser Gln Ile Ala Asp Trp Phe
 405 410 415
 Thr Val Thr Tyr Ser Thr Lys Trp Thr Arg Glu Asp Phe Asp Arg Pro
 420 425 430
 Ser Tyr Leu Thr Gly Leu Phe Phe His Asn Ile Ala Arg Arg Trp Pro
 435 440 445
 Thr Asn Pro Ala Tyr Asp Pro Asn Gly His Pro Val Asp Gly Met Glu
 450 455 460
 Ile Glu Gln Leu Glu Asn Gly Gly Lys Gln Ile Asn Gln Lys Asp Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

465 470 475 480
 Asn Thr Gln Gln Leu Gln Phe Ile Phe Glu Pro Ile Lys Asn Trp Arg
 485 490 495
 Ile Asn Val Glu Gly Ser Leu Arg Thr Thr Asn Thr Asn Glu His Trp
 500 505 510
 Asp Val Leu Pro Val Tyr Ala Tyr Asn Ala Asp Asn Glu Pro Tyr Leu
 515 520 525
 Ile Ser Trp Asn Gly Gly Ala Leu Gly Leu Ser Gln Val Asn Glu Tyr
 530 535 540
 Ser Tyr Lys Glu Asn Tyr Tyr Thr Thr Asn Ile Tyr Ser Asp Tyr Phe
 545 550 555 560
 Lys Gln Phe Asp Ser Gly His Tyr Phe Lys Val Met Ala Gly Phe Asn
 565 570 575
 Ser Glu Leu Tyr Lys Thr Arg Tyr Val Gln Ala Gln Lys Ser Thr Leu
 580 585 590
 Ile Ser Ser Ser Val Pro Thr Ile Asn Thr Ala Thr Glu Asp Pro Lys
 595 600 605
 Ala Trp Gly Gly Tyr Ala His Asn Ala Val Ala Gly Phe Phe Gly Arg
 610 615 620
 Ile Asn Tyr Asn Tyr Lys Asp Arg Tyr Met Val Glu Ala Asn Gly Arg
 625 630 635 640
 Tyr Asp Gly Ser Ser Arg Phe Ile Gly Asp Lys Arg Trp Gly Phe Phe
 645 650 655
 Pro Ser Phe Ser Ala Gly Trp Asn Val Ala Gln Glu Pro Phe Phe Glu
 660 665 670
 Arg Ile Ala Glu Lys Cys Ser Ile Gly Thr Leu Lys Leu Arg Ala Ser
 675 680 685
 Trp Gly Gln Leu Gly Asn Thr Asp Thr Lys Asp Ala Trp Tyr Pro Phe
 690 695 700
 Tyr Gln Thr Met Pro Thr Gly Ser Asn Tyr Gly Trp Leu Leu Asn Gly
 705 710 715 720
 Ala Leu Pro Asn Tyr Ala Asn Asn Pro Gly Ile Val Ser Met Lys Lys
 725 730 735
 Thr Trp Glu Thr Ile Glu Thr Trp Asp Val Gly Leu Asp Trp Gly Leu
 740 745 750
 Phe Asn Asn Arg Leu Thr Gly Ser Phe Asp Tyr Phe Val Arg Tyr Thr
 755 760 765
 Tyr Asp Met Ile Gly Pro Ala Pro Glu Leu Ala Ala Ser Leu Gly Thr
 770 775 780
 Gly Val Pro Lys Ile Asn Asn Ala Asp Met Lys Ser Tyr Gly Phe Glu
 785 790 795 800
 Leu Glu Leu Gly Trp Arg Asp Arg Ile Arg Asp Phe Ser Tyr Gly Val
 805 810 815
 Lys Phe Val Leu Ser Asp Ser Gln Gln Lys Ile Leu Lys Tyr Pro Asn
 820 825 830
 Glu Asp Tyr Asn Ile Gly Thr Tyr Tyr Arg Gly Gln Lys Leu Asn Asn
 835 840 845
 Ile Trp Gly Tyr Lys Thr Ile Gly Ile Ala Gln Ser Gln Glu Glu Met
 850 855 860
 Asp Ala His Leu Ala Lys Val Asp Gln Ser Ala Leu Gly Ser Lys Trp
 865 870 875 880
 Gly Ala Gly Asp Ile Met Tyr Ala Asp Leu Asp Gly Asp Gly Lys Ile
 885 890 895
 Ser Thr Gly Ser Asn Lys Leu Gly Asp Thr Gly Asp Arg Val Ile Leu
 900 905 910
 Gly Asn Ser Thr Pro Arg Phe Asn Tyr Gly Leu Thr Ile Asp Ala Ser
 915 920 925
 Trp Lys Gly Ile Asp Phe Arg Ala Phe Phe Gln Gly Ile Gly Lys Arg
 930 935 940

Asp Tyr Trp Leu Gln Gly Pro Tyr Phe Trp Gly Ser Thr Gly Leu Gly
 945 950 955 960
 Gln Trp Gln Ala Ala Gly Phe Lys Glu His Trp Asp Phe Trp Arg Pro
 965 970 975
 Glu Gly Asp Pro Leu Gly Ala Asn Thr Asn Ala Tyr Tyr Pro Arg Val
 980 985 990
 Ala Arg Asn Gly Gly Lys Asn Thr Asn Val Gln Ser Arg Tyr Leu Gln
 995 1000 1005
 Asn Ala Ala Tyr Cys Arg Leu Lys Asn Ile Gln Ile Gly Tyr Thr Leu
 1010 1015 1020
 Pro Lys Thr Trp Thr Glu Lys Ala Gly Met Ser Ser Val Arg Val Tyr
 1025 1030 1035 1040
 Val Ser Gly Asp Asn Leu Leu Thr Phe Ser Asp Ile Thr Gly Ile Phe
 1045 1050 1055
 Asp Pro Glu Ala Ile Gly Ser Thr Tyr Asp Ala Asn Asn Gly Lys Leu
 1060 1065 1070
 Tyr Pro Leu Gln Arg Val Ile Ser Val Gly Leu Asn Val Asn Phe
 1075 1080 1085

<210> 7963

<211> 638

<212> PRT

<213> B.fragilis

<400> 7963

Ala Cys Lys Asp Arg His Tyr Leu Leu Ser His Asn Glu Leu Gln Glu
 1 5 10 15
 Ile Phe Ser Ile Val Ser Leu Phe Ser Asn Pro Ile Phe Val Pro Leu
 20 25 30
 Ser Pro Asn Asn Arg Tyr Tyr Met Gln Asn Ile Arg Asn Ile Ala Ile
 35 40 45
 Ile Ala His Val Asp His Gly Lys Thr Thr Leu Val Asp Lys Met Leu
 50 55 60
 Leu Ala Gly Asn Leu Phe Arg Gly Asn Gln Thr Ser Gly Glu Leu Ile
 65 70 75 80
 Leu Asp Asn Asn Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Leu Ser
 85 90 95
 Lys Asn Val Ser Ile Asn Tyr Asn Gly Thr Lys Ile Asn Ile Ile Asp
 100 105 110
 Thr Pro Gly His Ser Asp Phe Gly Gly Glu Val Glu Arg Val Leu Asn
 115 120 125
 Met Ala Asp Gly Cys Ile Leu Leu Val Asp Ala Phe Glu Gly Pro Met
 130 135 140
 Pro Gln Thr Arg Phe Val Leu Gln Lys Ala Leu Glu Ile Gly Leu Lys
 145 150 155 160
 Pro Ile Val Val Ile Asn Lys Val Asp Lys Pro Asn Cys Arg Pro Asp
 165 170 175
 Glu Val His Glu Met Val Phe Asp Leu Met Phe Ser Leu Asp Ala Thr
 180 185 190
 Glu Glu Gln Leu Asp Phe Pro Thr Ile Tyr Gly Ser Ala Lys Asn Asn
 195 200 205
 Trp Met Ser Thr Asp Trp Lys Glu Gln Thr Asp Ser Ile Val Pro Leu
 210 215 220
 Leu Asp Cys Ile Val Glu Asn Ile Pro Ala Pro Glu Gln Leu Glu Gly
 225 230 235 240
 Thr Pro Gln Met Leu Ile Thr Ser Leu Asp Tyr Ser Ser Tyr Thr Gly
 245 250 255
 Arg Ile Ala Val Gly Arg Val His Arg Gly Thr Leu Lys Glu Gly Met
 260 265 270

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Asn Val Ser Leu Ala Lys Arg Asp Gly Ser Ile Val Lys Ser Lys Ile
 275                               280           285
Lys Glu Val His Val Phe Glu Gly Leu Gly Arg Val Lys Thr Thr Glu
 290                               295           300
Val Ser Ser Gly Asp Ile Cys Ala Leu Val Gly Ile Asp Gly Phe Glu
 305                               310           315           320
Ile Gly Asp Thr Ile Cys Asp Tyr Glu Asn Pro Glu Ala Leu Pro Pro
 325                               330           335
Ile Ala Ile Asp Glu Pro Thr Met Ser Met Leu Phe Ala Ile Asn Asp
 340                               345           350
Ser Pro Phe Tyr Gly Lys Asp Gly Lys Phe Val Thr Ser Arg His Ile
 355                               360           365
His Asp Arg Leu Thr Lys Glu Leu Asp Lys Asn Leu Ala Leu Arg Val
 370                               375           380
Arg Lys Ser Glu Glu Asp Gly Lys Trp Val Val Ser Gly Arg Gly Val
 385                               390           395           400
Leu His Leu Ser Val Leu Ile Glu Thr Met Arg Arg Glu Gly Tyr Glu
 405                               410           415
Leu Gln Val Gly Gln Pro Gln Val Ile Tyr Lys Glu Ile Asp Gly Val
 420                               425           430
Lys Cys Glu Pro Ile Glu Glu Leu Thr Ile Asn Val Pro Glu Glu Tyr
 435                               440           445
Ser Ser Lys Ile Ile Asp Met Val Thr Arg Arg Lys Gly Glu Met Thr
 450                               455           460
Met Met Glu Asn Thr Gly Glu Arg Ile Asn Leu Glu Phe Asp Met Pro
 465                               470           475           480
Ser Arg Gly Ile Ile Gly Leu Arg Thr Asn Val Leu Thr Ala Ser Ala
 485                               490           495
Gly Glu Ala Ile Met Ala His Arg Phe Lys Glu Tyr Gln Pro Phe Lys
 500                               505           510
Gly Asp Ile Glu Arg Arg Thr Asn Gly Ser Ile Ile Ala Met Glu Ser
 515                               520           525
Gly Thr Ala Phe Ala Tyr Ala Ile Asp Lys Leu Gln Asp Arg Gly Lys
 530                               535           540
Phe Phe Ile Phe Pro Gln Glu Glu Val Tyr Ala Gly Gln Val Val Gly
 545                               550           555           560
Glu His Ala His Glu Lys Asp Leu Val Val Asn Val Thr Lys Ser Lys
 565                               570           575
Lys Leu Thr Asn Met Arg Ala Ser Gly Ser Asp Glu Lys Ala Arg Leu
 580                               585           590
Ile Pro Pro Val Gln Phe Ser Leu Glu Glu Ala Leu Glu Tyr Ile Lys
 595                               600           605
Glu Asp Glu Tyr Val Glu Val Thr Pro Lys Ala Met Arg Met Arg Lys
 610                               615           620
Val Ile Leu Asp Glu Thr Glu Arg Lys Arg Ala Asn Lys Ser
 625                               630           635

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<210> 7964
 <211> 435
 <212> PRT
 <213> B.fragilis

<400> 7964
 Asp Lys Arg Glu Met Met Met Lys Lys Ile Asn Arg Trp Leu Ile Phe
 1 5 10 15
 Leu Leu Cys Val Pro Thr Val Ala Phe Ala Gln Gln Asn Ser Leu Leu
 20 25 30
 Gln Lys Tyr Arg Ser Met Ala Leu Asp Tyr Asn His Asp Leu Lys Ala
 35 40 45

Ala Asp Lys Asn Ile Ala Ala Ser Ile Glu Leu Glu Lys Ala Ala Gln
 50 55 60
 Lys Asp Leu Arg Pro Lys Leu Ser Gly Glu Ala Asn Phe Gln Tyr Thr
 65 70 75 80
 Gly Asn Pro Leu Gln Leu Asn Ile Asp Leu Pro Ser Met Gln Thr Pro
 85 90 95
 Leu Ala Phe Glu Gly Arg Asn Met Lys Tyr Gly Ala Ser Leu Ser Leu
 100 105 110
 Leu Gln Pro Val Tyr Thr Gly Gly Arg Leu Leu Glu Ser Ile Arg Met
 115 120 125
 Ala Lys His Gln Gln Ser Leu Ala Ile His Gln Ala Asp Tyr Phe Arg
 130 135 140
 Ser Ala Val Ser Tyr Gln Thr Asp Met Gln Tyr Trp Asn Thr Val Ala
 145 150 155 160
 Arg Ala Glu Ile Val Arg Val Thr Thr Glu Tyr Arg Asn Ser Val Ala
 165 170 175
 Thr Phe Ser Gln Ser Ile Arg Glu Arg Val Glu Ala Gly Leu Val Asp
 180 185 190
 Pro Gln Asp Leu Leu Met Ala Glu Val Lys Leu Asn Glu Ala Glu Tyr
 195 200 205
 Gln Leu Leu Gln Ala Lys Arg Asn Leu Glu Thr Gly Arg Met Ala Leu
 210 215 220
 Asn Ser Leu Ile Gly Val Glu Leu His Ala Pro Thr Glu Ile Glu Asp
 225 230 235 240
 Thr Ile Ser Ala Val Arg Ala Asp Lys Asp Leu Trp Gly Glu Gly Glu
 245 250 255
 Ile Asp Arg Pro Glu Leu Lys Met Ala Tyr Ala Arg Ile Lys Ile Ala
 260 265 270
 Glu Ser Ser Lys Lys Leu Thr Asp Ala Lys Tyr Lys Pro Gln Phe Tyr
 275 280 285
 Ile Gly Val Asp Gly Ser Tyr Ser Ala Pro Gly Tyr Asp Phe Arg Ser
 290 295 300
 Asp Leu Asp Pro Asn Tyr Ala Ile Tyr Ala Lys Val Ser Val Pro Leu
 305 310 315 320
 Phe Glu Trp Gly Lys Arg Arg Asp Glu Lys Arg Ala Ser Ser Phe Lys
 325 330 335
 Val Gly Met Ala Thr Asp Tyr Leu Asn Gln Val Thr Asp Gln Val Lys
 340 345 350
 Leu Glu Val Glu Thr Ala Arg Val Ser Leu Ser Gln Thr Met Glu Gln
 355 360 365
 Val Arg Leu Thr Glu Gly Ser Leu Ser Lys Ala Phe Glu Asn Glu Arg
 370 375 380
 Met Ala Leu Glu Arg Tyr Thr Glu Gly Lys Ala Ser Val Ile Glu Val
 385 390 395 400
 Ile Glu Ala Gln Thr Tyr Arg Gln Ala Ser Gln Leu Asn His Val Gln
 405 410 415
 Ala Lys Val Ser Ala Gln Gly Ala Tyr Ser Glu Leu Ile Arg Ala Leu
 420 425 430
 Asn Lys Tyr
 435

<210> 7965

<211> 358

<212> PRT

<213> B.fragilis

<400> 7965

Asp Cys Met Glu Glu Asn Glu Asp Met Cys Pro Leu Ser Gly Asn Glu
 1 5 10 15

Ile Ser Asn Ser Met Glu Ala Lys Gln Asp Thr Asp Ser Leu Phe Asp
 20 25 30
 Arg Thr Ser Glu Cys Asp Leu Ser Ile Glu Glu Tyr Leu His Phe Leu
 35 40 45
 Arg Asn Ala Leu His Ile Val Asp Leu Ser Met Arg Met Lys Val Ser
 50 55 60
 Gln Gln Asp Ile Asp Glu Phe Phe Ile Glu Phe Tyr Leu Lys His Glu
 65 70 75 80
 Asn Ser Tyr Lys Arg Ser Glu Gly Phe Ala Ala Lys Leu Ile Phe Gly
 85 90 95
 Ser Ile Leu Pro Ile Phe Ala Asn Ser Ile Phe Ile Asp Ile Asn Lys
 100 105 110
 Ala Lys Glu Trp Glu Arg Asn Cys Glu Ile Asp Ile Glu Lys Tyr Gly
 115 120 125
 Met Ala Ser Gly Asn Gly Tyr Ala Gln Glu Tyr Tyr Asp Lys Asn Lys
 130 135 140
 Ile Ile Glu Tyr Lys Tyr Lys Ser Leu Leu Lys Ile Phe Ser Asp Pro
 145 150 155 160
 Glu Ile Tyr Ala Glu Leu Arg Lys Gln Thr Leu Glu Pro Ile Glu Leu
 165 170 175
 Leu Leu Lys Lys Asn Lys Asn Met Asn Phe Glu Lys Asp Lys Val Ser
 180 185 190
 Ser Lys Lys Asp Thr Thr Leu Cys Ser Ile Leu Leu Glu Asn Ser Val
 195 200 205
 Asp Val Ile Gly Lys Ile Asn Lys Arg His Ser Lys Leu Ser Ala Glu
 210 215 220
 Leu Ile Gly Ile Leu Thr Leu Cys Glu Asn Glu Val Lys Leu Phe Ser
 225 230 235 240
 Ser Leu Gly Lys Lys Pro Gln Val Asp Asn Tyr Asn Ser Leu Thr Ala
 245 250 255
 Arg Glu Arg Val Ile Leu Thr Ala Cys Arg Leu Tyr Asn Glu Gly Phe
 260 265 270
 Arg Gly Leu Pro Glu Ser Arg Ile Ala Arg Val Ile Ala Met Glu Tyr
 275 280 285
 Gly Gly Ala Glu Glu Thr Phe Arg Lys Ile Leu Lys Gln Leu Asn Asn
 290 295 300
 Asp Asn Phe Asn Cys Ala Lys Leu Lys Thr Leu Lys Asp Leu Thr Glu
 305 310 315 320
 Val Leu Lys Lys Glu Ala Asn Glu Ser Asn Val Arg Ile Ala Asn Glu
 325 330 335
 Lys Tyr Lys Lys Ile Thr Glu Phe Arg Ile Gly Ser Leu Arg Glu Leu
 340 345 350
 Met Arg Lys Thr Lys Glu
 355

<210> 7966

<211> 392

<212> PRT

<213> B.fragilis

<400> 7966

Lys Pro Val Asp Leu Gln Val Ala Ala Ile Gly Thr Val Glu Lys Gln
 1 5 10 15
 Val Leu Ile Lys Gln Leu Lys Ser Arg Arg Gln Gln Lys Thr Met
 20 25 30
 Lys Asn Asn Ser Gly Arg Leu Ser Leu Arg Lys Arg Leu Gly Leu Glu
 35 40 45
 Ile Ala Leu Lys Ile Arg Asn Asn Leu Arg Glu Leu His Pro Leu Arg
 50 55 60

Gln Leu Phe Trp Glu Cys Thr Leu Gln Cys Asn Leu Ala Cys Lys His
 65 70 75 80
 Cys Gly Ser Asp Cys Arg Lys Met Ser Glu Gln Lys Asp Met Pro Ala
 85 90 95
 Thr Asp Phe Leu Gln Val Val Asp Ser Ile Thr Pro His Val Asn Pro
 100 105 110
 Asn Glu Val Asn Ile Ile Ile Thr Gly Gly Glu Pro Leu Met Arg Asp
 115 120 125
 Asp Leu Glu Glu Val Gly Met Ala Leu Tyr Arg Lys Gly Tyr Pro Trp
 130 135 140
 Gly Ile Val Ser Asn Gly Leu Tyr Leu Thr Arg Glu Arg Leu Asp Ser
 145 150 155 160
 Leu Met Ala Ala Gly Leu His Ala Val Thr Ile Ser Leu Asp Gly Phe
 165 170 175
 Ala Glu Glu His Asn Trp Leu Arg Gly Asn Pro Asp Ser Tyr Glu Lys
 180 185 190
 Ala Leu Glu Ala Ile Lys Met Leu Val His Glu Pro Glu Leu Thr Trp
 195 200 205
 Asp Val Val Thr Cys Val Asn Arg Lys Asn Tyr Ser Tyr Leu Glu Glu
 210 215 220
 Leu Lys Ala Tyr Leu Tyr Thr Ile Gly Val Arg Asn Trp Arg Ile Phe
 225 230 235 240
 Thr Ile Phe Pro Val Gly Arg Ala Ala Asn His Pro Glu Phe Gln Leu
 245 250 255
 Thr Asp Glu Glu Phe Thr Gly Val Leu Glu Phe Ile Lys Lys Val Arg
 260 265 270
 Lys Glu Gly Arg Val His Leu Ser Tyr Gly Cys Glu Gly Phe Leu Gly
 275 280 285
 Lys Tyr Glu Ser Glu Val Arg Asp His Phe Tyr Ser Cys Asn Ala Gly
 290 295 300
 Ile Ser Val Ala Ser Val Leu Ala Asp Gly Ser Ile Ser Ser Cys Pro
 305 310 315 320
 Ser Ile Arg Ser Asn Phe His Gln Gly Asn Ile Tyr Glu Asp Asp Phe
 325 330 335
 Met Glu Val Trp Glu Lys Arg Phe Gln Val Phe Arg Asn Arg Glu Trp
 340 345 350
 Ala Arg Lys Gly Glu Cys Ala Asp Cys Ser Phe Phe Arg Tyr Cys Glu
 355 360 365
 Gly Asn Gly Met His Leu His Asn Asp Asn Gly Asp Leu Leu Phe Cys
 370 375 380
 His Gln Lys Arg Ile Val Glu Leu
 385 390

<210> 7967

<211> 496

<212> PRT

<213> B.fragilis

<400> 7967

Thr Leu Ser Glu Cys Pro Ser Pro Thr Ser Lys Glu Gln Gln Trp Ala
 1 5 10 15
 Val Ala Arg Pro Gln Phe Ser Gly Ser Gly Thr Ser Met Gln Val Phe
 20 25 30
 Thr Gly Lys Ser Gly Glu Ala His Thr Ala Gly Pro Leu Leu Asn Leu
 35 40 45
 His Arg Pro Ala Tyr Pro Glu Ser Trp Phe Asn Gly Gly Lys Gly Gly
 50 55 60
 Phe Ala Ile Arg Lys Glu Ala Asp Gly Val Ile Ala Val Ala Tyr Ser
 65 70 75 80

Gly	Glu	Arg	Met	Leu	Glu	Ala	Gly	Ser	Ser	Ile	Thr	Phe	His	Phe	Ala
				85					90					95	
Met	Ile	Ile	Thr	Pro	Val	Lys	Met	Leu	Asp	Met	Lys	Ser	Gln	Phe	Thr
			100					105					110		
Asp	Arg	Tyr	Tyr	His	Asn	Gly	Pro	Lys	Pro	Thr	Pro	Ser	Gln	Ala	Asp
		115					120					125			
Ile	Glu	Ala	Gly	Val	Arg	Ile	Ile	Asn	Val	His	Gln	Gly	Asn	Asp	Tyr
	130					135					140				
Asn	Pro	Phe	Ile	Asn	Tyr	Pro	Phe	Leu	Thr	Val	Asp	Lys	Met	Lys	Glu
145					150					155					160
Phe	Thr	Lys	Glu	Trp	His	Ala	Arg	Gly	Cys	Lys	Ile	Lys	Ile	Tyr	Tyr
			165					170						175	
Thr	Leu	Arg	Glu	Leu	Ser	Asn	Ala	Thr	Ala	Glu	Ile	Trp	Ala	Ile	Arg
			180					185					190		
Ser	Leu	Gly	Asn	Glu	Ile	Leu	Arg	Gly	Gly	Asn	Gly	Glu	Gly	Phe	Pro
		195					200					205			
Trp	Cys	Arg	Glu	His	Phe	Val	Thr	Asn	Tyr	Thr	Pro	Gln	Trp	Tyr	Glu
	210					215					220				
His	Phe	Asp	Asn	Ala	Asp	Lys	Gln	Gly	Ile	Thr	Ala	Asp	Ala	Ser	Ile
225					230					235					240
Leu	Thr	Ala	Glu	Gly	Asp	Ser	Arg	Trp	Tyr	Asn	Tyr	Tyr	Ile	Glu	Gly
			245					250						255	
Leu	Arg	Trp	Met	Val	Gln	Asn	Met	Asp	Ile	Asp	Gly	Ile	Tyr	Leu	Asp
		260						265					270		
Asp	Val	Ser	Phe	Asp	Arg	Arg	Ile	Leu	Lys	Arg	Met	Arg	Arg	Ala	Met
		275					280					285			
Glu	Ser	Val	Lys	Pro	Gly	Cys	Leu	Ile	Asp	Leu	His	Ser	Asn	Thr	Gly
		290				295					300				
Phe	Ser	Arg	Gly	Pro	Ala	Asn	Gln	Tyr	Thr	Glu	Phe	Phe	Pro	Tyr	Val
305					310					315					320
Asp	Lys	Leu	Trp	Phe	Gly	Glu	Ser	Phe	Leu	Tyr	Asp	Lys	Met	Thr	Pro
			325					330						335	
Ala	Asn	Trp	Leu	Val	Glu	Ser	Ser	Gly	Ile	Pro	Phe	Gly	Leu	Ser	Gly
			340					345					350		
Asp	Met	Leu	Tyr	Arg	Gly	Gly	Asn	Ala	Trp	Leu	Gly	Met	Gln	Tyr	Gly
		355					360						365		
Met	Thr	Val	Arg	Tyr	Pro	Trp	Tyr	Thr	Glu	Gly	Val	Asn	Cys	Asp	Pro
	370					375					380				
Arg	Gln	Val	Trp	Lys	Ile	Trp	Asp	Ser	Phe	Gly	Ile	Ala	Glu	Ala	Thr
385					390					395					400
Met	Leu	Gly	Phe	Trp	Glu	Glu	His	Pro	Ala	Val	Ser	Thr	Ser	Asp	Glu
			405					410						415	
Ala	Val	Lys	Val	Thr	Val	Tyr	Arg	Lys	Pro	Glu	Lys	Val	Leu	Leu	Ser
			420					425					430		
Leu	Gly	Asn	Tyr	Ser	Asp	Glu	Val	Lys	Thr	Val	Lys	Leu	Asn	Ile	Asp
		435					440					445			
Trp	Lys	Gln	Ile	Gly	Leu	Asn	Pro	Gln	Lys	Ala	Lys	Leu	Thr	Thr	Pro
	450					455					460				
Glu	Ile	Pro	Asp	Met	Gln	Gln	Ala	His	Glu	Trp	Asn	Val	Asp	Thr	Pro
465					470					475					480
Ile	Val	Thr	Ala	Pro	Arg	Lys	Gly	Trp	Ile	Ile	Tyr	Leu	Thr	Ser	Glu
				485				490						495	

<210> 7968

<211> 60

<212> PRT

<213> B.fragilis

<400> 7968

Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
 1 5 10 15
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
 20 25 30
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
 35 40 45
 Arg Ala Thr Gln Asp Thr Thr Leu Arg Leu Pro
 50 55 60

<210> 7969

<211> 243

<212> PRT

<213> B.fragilis

<400> 7969

Ile Gln His Trp Leu Asp Ser Lys Lys Leu Ser Thr Thr Ala Asn Leu
 1 5 10 15
 Pro Ser Arg Leu Phe Ala Cys Phe Arg Gln Val Thr Tyr Ile Cys Ser
 20 25 30
 Arg Ile Val Thr Met Cys Lys Met Lys Gly Lys Ser Ile Thr Gly Glu
 35 40 45
 Arg Asp Arg Glu Ala Thr Glu Lys Arg Leu Leu Asp Thr Ile Gly Lys
 50 55 60
 Met Ile Ala Glu Asp Gly Phe Glu Lys Ile Gly Ile Asn Ala Ile Ala
 65 70 75 80
 Thr Gln Ser Gly Val Ser Lys Ile Leu Ile Tyr Arg Tyr Phe Gly Ser
 85 90 95
 Val Glu Gly Leu Met Ala Ala Tyr Ile Arg Gln His Asp Phe Trp Ile
 100 105 110
 Asn Phe Pro Leu Glu Tyr Pro Ser Arg Glu Lys Leu Pro Ala Phe Val
 115 120 125
 Lys Arg Met Phe Gln Gly Gln Ile Glu Gln Leu Arg Asn Asn Pro Thr
 130 135 140
 Leu Lys Arg Leu Tyr Arg Trp Glu Leu Ser Cys Asn Asn Asp Met Ile
 145 150 155 160
 Val Lys Leu Arg Glu Gln Arg Glu Lys Val Gly Ile Asp Leu Val Lys
 165 170 175
 Lys Val Ser Glu Leu Thr Gly His Pro Gln Lys Glu Ile Ala Ala Ile
 180 185 190
 Ala Ser Met Leu Thr Ala Ser Ile Thr Tyr Leu Val Met Leu Glu Asp
 195 200 205
 Phe Cys Pro Val Tyr Asn Gly Ile Pro Leu Asn Glu Asn Ser Gly Trp
 210 215 220
 Glu Gln Ile Asn Glu Gly Ile Glu Ile Leu Ile Asn Lys Val Phe Gln
 225 230 235 240
 Asp Glu Asn

<210> 7970

<211> 106

<212> PRT

<213> B.fragilis

<400> 7970

Leu Lys His Cys Cys Met Asn Lys Lys Glu Leu Ile Ser Thr Ile Ala
 1 5 10 15
 Glu Lys Ala Gly Leu Asn Lys Ser Glu Ser Arg Lys Leu Leu Asn Val
 20 25 30
 Ile Ile Gly Ile Val Ile Glu Glu Met Lys Lys Asp Gly Lys Leu Leu

Val Ser Thr Leu Gly Thr Gly Ile Arg Phe Val Asp Pro Leu Gln Ile
 165 170 175
 Tyr Ile Pro Lys Arg Ser Gly Lys Val Asn Met Ala Asn Pro Ala Ala
 180 185 190
 Ser Phe Asn Met Asp Tyr Leu Tyr Ser Pro Gly Val Val Phe Val Val
 195 200 205
 Asn Gln Gln Lys Tyr Asp Gly Gln Tyr Ile Leu Thr Ser Leu Asp Phe
 210 215 220
 Ala Arg Arg Leu Leu Asp Tyr Thr Thr Glu Val Ser Ala Ile Glu Leu
 225 230 235 240
 Lys Leu Lys Pro Gly Ser Asp Leu Ser Phe Val Lys Ala Lys Ile Lys
 245 250 255
 Lys Glu Leu Gly Asp Asp Phe Val Ile Arg Asn Arg Tyr Glu Gln Gln
 260 265 270
 Glu Asp Val Phe Arg Ile Met Glu Ile Glu Lys Leu Val Ser Tyr Leu
 275 280 285
 Phe Leu Thr Phe Ile Leu Val Ile Ala Cys Phe Asn Val Ile Gly Ser
 290 295 300
 Leu Ser Met Leu Ile Leu Asp Lys Lys Glu Asp Val Asp Thr Leu Arg
 305 310 315 320
 Lys Leu Gly Ala Asn Asp Arg Leu Val Ser Arg Ile Phe Leu Phe Glu
 325 330 335
 Gly Cys Met Ile Ser Phe Tyr Gly Ala Ile Ile Gly Ile Val Leu Gly
 340 345 350
 Leu Leu Leu Cys Trp Val Gln Met Thr Tyr Gly Ile Ile Ser Leu Gly
 355 360 365
 Gly Gly Ser Ala Ala Gly Asn Phe Val Val Asp Ala Tyr Pro Val Ser
 370 375 380
 Val His Leu Trp Asp Val Ile Val Ile Phe Ile Thr Val Phe Ala Val
 385 390 395 400
 Gly Phe Leu Ser Val Trp Tyr Pro Val Arg Tyr Leu Ser Lys Arg Leu
 405 410 415
 Leu Lys Met

<210> 7973
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7973
 Ile Ser Pro Cys Gln Tyr Val Ile Arg Pro His Cys Val Leu Thr Tyr
 1 5 10 15
 Asp Ile Trp Leu Tyr Ser Gln Gly Arg Lys Val Met Lys Gly Arg Leu
 20 25 30
 Arg Asp Asp Gly Met Leu Asp Asp Ile Phe Val Tyr Ser Arg Ile Leu
 35 40 45
 Val Lys Phe Val Arg Pro Ser Phe Thr Phe Leu Leu Arg Gly Gly Glu
 50 55 60

<210> 7974
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7974
 Pro Met Glu Trp Leu Asn Glu Tyr His Leu Ser Gly Leu Leu Ile Gly
 1 5 10 15
 Ile Cys Thr Phe Leu Ile Ile Gly Leu Phe His Pro Val Val Val Lys

Species	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	

<400> 7975

Ile	Met	Leu	Leu	Lys	Gln	Thr	Lys	Ile	Val	Ala	Ser	Ile	Ser	Asp	Arg
1				5					10					15	
Arg	Cys	Asp	Val	Asp	Phe	Ile	Lys	Glu	Leu	Phe	Asp	Ala	Gly	Met	Asn
			20					25					30		
Val	Val	Arg	Met	Asn	Thr	Ala	His	Ala	Ser	Arg	Glu	Gly	Phe	Glu	Ala
			35				40					45			
Leu	Ile	Ala	Asn	Val	Arg	Ala	Val	Ser	Asn	Arg	Ile	Ala	Ile	Leu	Met
			50			55				60					
Asp	Thr	Lys	Gly	Pro	Glu	Val	Arg	Thr	Thr	Ala	Asn	Ala	Asp	Pro	Ile
65				70						75				80	
Leu	Tyr	Gln	Ile	Gly	Glu	Lys	Val	Lys	Ile	Val	Gly	Asp	Pro	Asp	Arg
				85					90					95	
Glu	Thr	Thr	Arg	Glu	Cys	Ile	Ala	Val	Ser	Tyr	Pro	Asn	Phe	Val	His
			100					105					110		
Asp	Leu	Asn	Val	Gly	Gly	Thr	Ile	Leu	Ile	Asp	Asp	Gly	Asp	Leu	Glu
			115				120					125			
Leu	Arg	Val	Ile	Asp	Lys	Thr	Thr	Glu	Tyr	Leu	Leu	Cys	Glu	Val	Gln
			130			135					140				
Asn	Glu	Ala	Thr	Leu	Gly	Ser	Arg	Lys	Ser	Val	Asn	Val	Pro	Gly	Val
145				150						155				160	
Arg	Ile	Asn	Leu	Pro	Ser	Leu	Thr	Glu	Lys	Asp	Arg	Asn	Asn	Ile	Leu
			165						170				175		
Tyr	Ala	Ile	Glu	Lys	Asp	Ile	Asp	Phe	Ile	Ala	His	Ser	Phe	Val	Arg
			180					185					190		
Asn	Arg	Gln	Asp	Val	Leu	Asp	Ile	Arg	Gly	Ile	Leu	Asp	Ala	His	Asn
			195				200					205			
Ser	Asp	Ile	Arg	Ile	Ile	Ala	Lys	Ile	Glu	Asn	Gln	Glu	Gly	Val	Asp
						215					220				
Asn	Ile	Asp	Glu	Ile	Leu	Glu	Val	Ala	Asp	Gly	Val	Met	Val	Ala	Arg
225				230						235				240	
Gly	Asp	Leu	Gly	Ile	Glu	Val	Pro	Gln	Glu	Arg	Ile	Pro	Gly	Ile	Gln
			245						250					255	
Arg	Met	Leu	Ile	Arg	Lys	Cys	Ile	Leu	Ala	Lys	Lys	Pro	Val	Ile	Val
			260					265					270		
Ala	Thr	Gln	Met	Leu	His	Thr	Met	Ile	Asn	Asn	Pro	Arg	Pro	Thr	Arg
			275				280					285			
Ala	Glu	Val	Thr	Asp	Ile	Ala	Asn	Ala	Ile	Tyr	Tyr	Arg	Thr	Asp	Ala
			290			295					300				
Leu	Met	Leu	Ser	Gly	Glu	Thr	Ala	Tyr	Gly	Lys	Tyr	Pro	Val	Glu	Ala
305				310						315				320	
Val	Lys	Thr	Met	Thr	Lys	Ile	Ala	Ala	Gln	Ala	Glu	Lys	Asp	Lys	Leu

				325					330					335	
Glu	Glu	Asn	Asp	Ile	Arg	Ile	Pro	Leu	Asp	Glu	Asn	Ser	Asn	Asp	Val
			340						345					350	
Thr	Ala	Phe	Leu	Ala	Lys	Gln	Ala	Val	Lys	Ala	Thr	Thr	Lys	Leu	Lys
		355					360						365		
Ile	Arg	Ala	Ile	Ile	Thr	Asp	Ser	Tyr	Gln	Gly	Arg	Thr	Ala	Arg	Asn
	370					375					380				
Leu	Ala	Ala	Phe	Arg	Gly	Lys	Tyr	Pro	Val	Leu	Ala	Ile	Cys	Tyr	Lys
385					390					395					400
Glu	Lys	Thr	Met	Arg	His	Leu	Ala	Leu	Ser	Tyr	Gly	Val	Glu	Ala	Ile
			405						410					415	
Tyr	Met	Pro	Glu	Leu	Ala	Asn	Gly	Gln	Glu	Tyr	Tyr	Phe	Ala	Ala	Leu
			420					425					430		
Arg	Arg	Leu	Leu	Lys	Glu	Gly	Arg	Leu	His	Pro	Thr	Asp	Met	Val	Gly
		435				440						445			
Tyr	Leu	Ser	Ser	Gly	Lys	Ala	Gly	Thr	Gln	Thr	Ser	Phe	Leu	Glu	Ile
	450				455					460					
Asn	Val	Val	Glu	Asp	Ala	Leu	Lys	His	Ala	Gly	Asp	Ser	Val	Leu	Pro
465					470				475						480
Asn	Ser	Asn	Arg	Tyr	Leu										
				485											

<210> 7976

<211> 403

<212> PRT

<213> B.fragilis

<400> 7976

Leu	Phe	Met	Leu	Met	Lys	Thr	Arg	Met	Ile	Tyr	His	Ser	Leu	Ala	Ile
1				5					10					15	
Cys	Cys	Leu	Leu	Pro	Ala	Phe	Ala	Phe	Thr	Thr	Gly	Glu	Asn	Asp	Pro
		20					25						30		
Phe	Ile	Lys	Ser	Pro	Thr	Val	Ala	Lys	Leu	Thr	Asn	Thr	Pro	Asn	Gly
	35					40					45				
Pro	Leu	Ile	Ser	Cys	Asp	Leu	Lys	Ala	Leu	Lys	Asp	Thr	Val	Asn	Phe
	50				55						60				
Pro	Leu	Ser	Gln	Leu	Thr	Glu	Glu	Leu	Gln	Ile	Val	Lys	Leu	Asp	Asn
65				70					75					80	
Arg	Asp	Glu	Ala	Leu	Ile	Gly	Gly	Trp	Ile	Arg	Thr	Thr	Val	Gly	Glu
			85					90					95		
Lys	Tyr	Ile	Leu	Val	Ser	Asn	Asn	Lys	Gln	Thr	Pro	Tyr	Lys	Leu	Phe
		100					105						110		
Asp	Arg	Thr	Gly	Lys	Phe	Ile	Thr	Asn	Ile	Gly	Ser	Tyr	Gly	Gln	Gly
	115					120					125				
Pro	Asn	Glu	Tyr	Leu	Asn	Thr	Tyr	Ala	Glu	Gln	Leu	Asp	Glu	Ala	Asn
	130				135						140				
Asn	Arg	Ile	Tyr	Ile	Leu	Pro	Trp	Gln	Ser	Ser	Lys	Ile	Leu	Val	Phe
145				150					155						160
Asp	Leu	Lys	Gly	Asn	Ala	Leu	Asp	Pro	Ile	Pro	Leu	Cys	Leu	Arg	Val
		165						170						175	
Pro	Lys	Gly	Lys	Phe	Arg	Val	Asn	Thr	Ala	Lys	Ser	Glu	Val	Thr	Val
	180						185						190		
Thr	Val	Leu	Pro	Phe	Pro	Lys	Trp	Pro	Ala	Val	Val	Trp	Thr	Gln	Asp
	195					200						205			
Leu	Lys	Gly	Lys	Arg	Lys	Asn	Phe	Val	Ala	Pro	Gly	Ser	Leu	Ala	Met
	210				215						220				
Pro	Gln	Asp	Phe	Ser	Asn	Glu	Val	Ser	Met	Gly	Asn	Asn	Thr	Ala	Ala
225				230					235						240
Tyr	Asp	Val	Met	Leu	Met	Lys	Ile	Met	Pro	Gln	Pro	Ser	Val	Asp	Thr

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				245					250						255
Leu	Tyr	His	Tyr	Asn	Ala	Ala	Ser	Asn	Lys	Leu	Glu	Gly	Arg	Phe	Thr
			260					265					270		
Val	Lys	Tyr	Pro	Ser	Asn	Asp	Lys	Ile	Pro	Trp	His	Ala	Tyr	Tyr	Glu
		275					280					285			
Ile	Pro	Lys	Tyr	Phe	Ile	Gly	Asp	Val	Ser	Phe	Pro	Ile	Gln	Ile	Asp
	290					295					300				
Glu	Ser	Thr	Phe	Ser	Gly	Ser	Lys	Pro	Ala	Tyr	Tyr	Met	Val	Asp	Lys
305					310						315				320
Lys	Thr	Leu	His	Gly	Asn	Tyr	Val	Arg	Leu	Tyr	Asn	Asp	Phe	Ile	Ser
				325					330					335	
Thr	Pro	Ser	Gln	Thr	Ile	Tyr	Pro	Ser	Phe	Asn	Asn	Gly	Tyr	Tyr	Val
			340					345					350		
Thr	Asn	Met	Glu	Pro	Met	Ala	Leu	Lys	Glu	Ile	Leu	Glu	Lys	Glu	Val
		355					360					365			
Asn	Lys	Lys	Gly	Leu	Thr	Ala	Asp	Lys	Lys	Lys	Lys	Val	Gln	Asn	Leu
	370					375					380				
Ile	Lys	Thr	Leu	Asn	Asp	Asn	Asp	Asn	Asn	Ile	Val	Met	Phe	Ala	Lys
385					390				395						400
Leu	Lys	Gln													

<210> 7977

<211> 194

<212> PRT

<213> B.fragilis

<400> 7977

Arg	Tyr	Ile	Arg	Ala	Tyr	Asn	Ser	Phe	Thr	His	Cys	Lys	Thr	His	Asn
1				5					10					15	
Cys	Asn	Asp	Pro	Met	Lys	Lys	Ile	Ile	Leu	Leu	Ile	Ile	Ala	Ser	Tyr
			20					25					30		
Thr	Val	Ala	Met	Ala	Thr	Ala	Gln	Lys	Lys	Glu	His	Phe	Thr	Phe	Ala
		35				40					45				
Thr	Ser	Val	Gly	Thr	Gly	Ile	Asp	Met	Ser	Glu	Pro	Ala	Ala	Thr	Pro
	50				55					60					
Phe	Ser	Leu	Gln	Val	Leu	Gly	Tyr	Tyr	Ala	Ile	Asn	Lys	Arg	Phe	Ser
65					70				75					80	
Val	Gly	Val	Gly	Thr	Gly	Leu	Ser	Ile	Tyr	Glu	Lys	Val	Leu	Ile	Pro
				85					90					95	
Leu	Phe	Ala	Asp	Ala	Lys	Phe	Leu	Ile	Ile	Lys	Pro	Arg	Lys	Phe	Thr
		100						105					110		
Pro	Tyr	Ile	Glu	Cys	Gly	Val	Gly	Tyr	Ser	Phe	Ala	Pro	Asn	Lys	Asn
	115						120					125			
Ala	Asn	Gly	Gly	Phe	Tyr	Leu	Asn	Pro	Ser	Ala	Gly	Val	Glu	Tyr	Ser
	130					135					140				
Ile	Cys	Lys	Ser	Lys	Lys	Leu	Phe	Leu	Ala	Leu	Gly	Tyr	Glu	Ser	Gln
145				150					155					160	
Lys	Leu	Glu	Arg	Leu	Lys	Thr	Gln	Lys	Gln	Ser	Leu	Phe	Thr	Ala	Glu
			165					170					175		
Phe	Thr	Glu	Lys	Leu	Ser	His	Asn	Ala	Ile	Ser	Ile	Lys	Ile	Gly	Phe
		180					185						190		
Met	Phe														

<210> 7978

<211> 76

<212> PRT

<213> B.fragilis

<400> 7978

Ala	Phe	Thr	Arg	Lys	Glu	Val	Ser	Ile	Phe	Leu	Lys	Cys	Pro	Tyr	Val
1				5					10					15	
Pro	Glu	Ile	Ser	Pro	Ile	Val	Val	Arg	Asn	Ile	Ser	Tyr	Cys	Tyr	Pro
			20					25					30		
Lys	Arg	Val	Leu	Ala	Glu	Glu	Phe	Phe	Leu	Pro	Leu	Thr	Ile	Ala	Asp
		35					40					45			
Lys	Ala	Leu	Tyr	Thr	Asp	Arg	Lys	Ala	Gly	Arg	Arg	Pro	Glu	Lys	Glu
		50				55					60				
Pro	Phe	Thr	Gly	Arg	Thr	Val	Ile	Pro	Pro	Ser	Lys				
65					70					75					

<210> 7979

<211> 514

<212> PRT

<213> B.fragilis

<400> 7979

Lys	His	Val	Leu	Ile	Lys	Val	Phe	Gly	Ala	Ala	Val	Gln	Gly	Ile	Glu
1			5					10					15		
Ala	Thr	Leu	Ile	Thr	Ile	Glu	Val	Asn	Ser	Ser	Arg	Gly	Cys	Met	Phe
		20						25					30		
Tyr	Met	Val	Gly	Leu	Pro	Asp	Ser	Ala	Val	Lys	Glu	Ser	His	Gln	Arg
		35				40						45			
Ile	Leu	Ser	Ala	Leu	Gln	Val	Thr	Gly	Tyr	Lys	Met	Pro	Thr	Ser	Asn
	50				55					60					
Ile	Val	Ile	Asn	Met	Ala	Pro	Ala	Asp	Ile	Arg	Lys	Glu	Gly	Ser	Ser
65				70					75					80	
Tyr	Asp	Leu	Pro	Leu	Ala	Ile	Gly	Met	Leu	Ala	Ala	Gly	Glu	Thr	Ile
			85					90						95	
Ser	Cys	Gln	Lys	Leu	Ser	Arg	Tyr	Met	Met	Met	Gly	Glu	Leu	Ser	Leu
			100					105					110		
Asp	Gly	Thr	Ile	Gln	Pro	Ile	Lys	Gly	Ala	Leu	Pro	Ile	Ala	Ile	Lys
		115					120						125		
Ala	Arg	Glu	Glu	Gly	Phe	Asp	Gly	Leu	Ile	Val	Pro	Ser	Gln	Asn	Ala
	130				135					140					
Arg	Glu	Ala	Ala	Val	Val	Asn	Asn	Leu	Ser	Val	Tyr	Gly	Val	Asn	Asn
145				150					155					160	
Ile	Gln	Glu	Val	Ile	Glu	Phe	Ile	Asn	Gly	Lys	Arg	Glu	Leu	Thr	Pro
			165					170						175	
Thr	Ile	Val	Asn	Thr	Arg	Glu	Glu	Phe	Tyr	Ala	Cys	Gln	Ser	Asp	Phe
		180						185					190		
Glu	Tyr	Asp	Phe	Ala	Asp	Val	Lys	Gly	Gln	Glu	Asn	Val	Lys	Arg	Ala
		195				200						205			
Leu	Glu	Val	Ala	Ala	Ala	Gly	Gly	His	Asn	Leu	Ile	Met	Val	Gly	Ala
	210				215						220				
Pro	Gly	Ser	Gly	Lys	Ser	Met	Met	Ala	Lys	Arg	Leu	Pro	Ser	Ile	Leu
225				230					235					240	
Pro	Pro	Leu	Ser	Leu	Gly	Glu	Ser	Leu	Glu	Thr	Thr	Lys	Ile	His	Ser
			245						250					255	
Val	Ala	Gly	Lys	Leu	Gly	Arg	Asn	Ser	Ser	Leu	Ile	Ser	Gln	Arg	Pro
		260					265						270		
Phe	Arg	Ala	Pro	His	His	Thr	Ile	Ser	Gln	Val	Ala	Met	Val	Gly	Gly
		275					280					285			
Gly	Ser	Phe	Pro	Gln	Pro	Gly	Glu	Ile	Ser	Leu	Ala	His	Asn	Gly	Val
	290					295					300				
Leu	Phe	Leu	Asp	Glu	Leu	Pro	Glu	Phe	Asn	Arg	Ser	Val	Leu	Glu	Val
305					310					315					320

Leu Arg Gln Pro Leu Glu Asp Arg Arg Ile Thr Ile Ser Arg Val Lys
 325 330 335
 Ser Thr Ile Asp Tyr Pro Ala Ser Phe Met Leu Val Ala Ser Met Asn
 340 345 350
 Pro Cys Pro Cys Gly Tyr Tyr Asn His Pro Thr Lys Pro Cys Val Cys
 355 360 365
 Asn Pro Gly Gln Val Gln Lys Tyr Leu Asn Lys Ile Ser Gly Pro Leu
 370 375 380
 Leu Asp Arg Ile Asp Ile Gln Ile Glu Ile Val Pro Val Pro Phe Glu
 385 390 395 400
 Lys Ile Ser Asp Arg Gln Gln Gly Glu Ser Ser Ala Ala Ile Arg Gln
 405 410 415
 Arg Val Ile Lys Ala Arg Gln Lys Gln Glu Glu Arg Phe Ser Gly Tyr
 420 425 430
 Pro Gly Thr Tyr Cys Asn Ala Gln Met Thr Ser Lys Gln Leu Ser Ser
 435 440 445
 Phe Ala Gln Pro Asp Thr Lys Gly Leu Leu Leu Leu Lys Asn Ala Met
 450 455 460
 Glu Arg Leu Asn Leu Ser Ala Arg Ala Tyr Asp Arg Ile Leu Lys Val
 465 470 475 480
 Ser Arg Thr Ile Ala Asp Leu Glu Glu Ser Glu Gln Ile Gln Pro Ser
 485 490 495
 His Leu Ala Glu Ala Ile Ser Tyr Arg Asn Leu Asp Arg Glu Asn Trp
 500 505 510
 Ala Gly

<210> 7980
 <211> 404
 <212> PRT
 <213> B.fragilis

<400> 7980
 Gly Asp Ile Arg Met Lys Lys Val Val Phe Leu Gly Leu Gly Tyr Ile
 1 5 10 15
 Gly Leu Pro Thr Ala Ala Val Ala Ala Gly His Gly Tyr Glu Val Val
 20 25 30
 Gly Val Asp Val Asn Pro Ser Val Val Glu Thr Ile Asn Gln Gly Lys
 35 40 45
 Ile His Ile Val Glu Pro Glu Leu Asp Gln Ile Val Lys Glu Val Val
 50 55 60
 Arg Thr Gly Asn Leu Arg Ala Val Ser Lys Pro Glu Gln Ala Asp Ala
 65 70 75 80
 Phe Phe Val Val Val Pro Thr Pro Phe Lys Gln Asn His Arg Ala Asp
 85 90 95
 Ile Thr Tyr Val Glu Ser Ala Thr Arg Ser Val Ile Pro Tyr Leu Arg
 100 105 110
 Glu Gly Asn Leu Phe Val Ile Glu Ser Thr Ser Pro Val Phe Thr Thr
 115 120 125
 Glu Arg Met Ala Glu Val Ile Tyr Lys Glu Arg Pro Glu Leu Lys Asp
 130 135 140
 Lys Ile Tyr Ile Ala Tyr Cys Pro Glu Arg Val Leu Pro Gly Asn Thr
 145 150 155 160
 Leu Tyr Glu Leu Val His Asn Asp Arg Val Ile Gly Gly Val Asn Pro
 165 170 175
 Glu Ser Thr Ala Lys Ala Ile Glu Phe Tyr Ser Ala Phe Val Gln Gly
 180 185 190
 Lys Leu His Pro Thr Asn Ala Arg Thr Ala Glu Met Cys Lys Leu Thr
 195 200 205

Glu Asn Ser Ser Arg Asp Ser Gln Ile Ala Phe Ala Asn Glu Leu Ser
 210 215 220
 Met Ile Cys Asp Lys Ala Gly Ile Asn Val Trp Glu Leu Ile Glu Leu
 225 230 235 240
 Ala Asn Lys His Pro Arg Val Asn Ile Leu Gln Pro Gly Cys Gly Val
 245 250 255
 Gly Gly His Cys Ile Ala Val Asp Pro Trp Phe Ile Val Ser Asp Tyr
 260 265 270
 Pro Glu Gln Ala Gln Ile Ile Lys Arg Ala Arg Glu Thr Asn Asp Tyr
 275 280 285
 Lys Ala Asp Trp Cys Ala Asn Lys Val Met Glu Ala Cys Gln Gln Phe
 290 295 300
 Val Glu Lys Asn Asp Arg Glu Pro Val Val Ala Cys Met Gly Leu Ala
 305 310 315 320
 Phe Lys Pro Asn Ile Asp Asp Leu Arg Glu Ser Pro Ala Lys Tyr Ile
 325 330 335
 Ala Ser Arg Ile Val Ser Glu Ser Arg Ala Glu Val Leu Ile Val Glu
 340 345 350
 Pro Asn Val Ala Ser His Ala Ser Phe His Leu Thr Asp Tyr Arg Glu
 355 360 365
 Ala Tyr Gln Lys Ala Asp Ile Val Val Trp Leu Val Arg His Thr Pro
 370 375 380
 Phe Val Glu Leu Pro Arg Glu Glu Ser Lys Leu Glu Leu Asp Phe Cys
 385 390 395 400
 Gly Val Arg Lys

<210> 7981

<211> 379

<212> PRT

<213> B.fragilis

<400> 7981

Ser Leu Thr Leu Met Lys Lys Pro Ser Ser Thr Leu Ala Pro Ala Leu
 1 5 10 15
 Ala Ser Leu Asp Ile Leu Arg Gly Phe Asp Leu Phe Leu Val Phe
 20 25 30
 Phe Gln Pro Val Leu Trp Thr Leu Ala His Gln Leu Asn Leu Pro Trp
 35 40 45
 Leu Asn Ser Ile Leu Phe Gln Phe Asp His Glu Val Trp Glu Gly Phe
 50 55 60
 Arg Phe Trp Asp Leu Val Met Pro Leu Phe Leu Phe Met Thr Gly Ala
 65 70 75 80
 Ser Met Pro Phe Ser Phe Ser Lys Phe Lys Asp Asn Pro Asp Lys Gly
 85 90 95
 Pro Val Tyr Arg Lys Ile Ile Lys Arg Phe Ile Leu Leu Phe Ile Phe
 100 105 110
 Gly Met Ile Val Gln Gly Asn Leu Leu Gly Leu Asp Pro Lys His Leu
 115 120 125
 Tyr Leu Tyr Ser Asn Thr Leu Gln Ala Ile Ala Thr Gly Tyr Leu Ile
 130 135 140
 Ala Ala Ile Ile Gln Leu His Cys Asn Phe Arg Trp Gln Leu Met Val
 145 150 155 160
 Thr Ala Leu Leu Leu Leu Ile Tyr Trp Ile Pro Met Thr Phe Leu Gly
 165 170 175
 Asp Phe Thr Pro Glu Gly Asn Phe Ala Glu Lys Val Asp Arg Leu Val
 180 185 190
 Leu Gly His Phe Arg Asp Gly Val Phe Trp Asn Glu Asp Gly Ser Trp
 195 200 205

Ser Phe Ser Ala His Tyr Asn Tyr Thr Trp Ile Trp Ser Ser Leu Thr
 210 215 220
 Phe Gly Ala Thr Val Met Leu Gly Ala Phe Ala Gly Lys Ile Met Lys
 225 230 235 240
 Ala Gly Lys Asp Asn Arg Arg Lys Val Val Gln Thr Leu Leu Ile Ile
 245 250 255
 Gly Ile Ser Leu Ile Ala Phe Ser Leu Ile Trp Ser Leu Gln Met Pro
 260 265 270
 Ile Ile Lys Arg Leu Trp Thr Ser Ser Met Thr Leu Phe Ser Gly Gly
 275 280 285
 Leu Cys Phe Leu Leu Met Gly Ala Phe Tyr Tyr Arg Ile Asp Tyr Lys
 290 295 300
 Gly His Ser Arg Gly Leu Asn Trp Leu Lys Ile Tyr Gly Met Asn Ser
 305 310 315 320
 Ile Thr Ala Tyr Ile Leu Gly Glu Val Ile Asn Phe Arg Cys Ile Ala
 325 330 335
 Ala Ser Val Ser Tyr Gly Leu Glu Gln Tyr Leu Gly Gly Tyr Tyr Gln
 340 345 350
 Val Trp Leu Ser Phe Ala Asn Tyr Leu Ile Val Phe Leu Ile Leu Arg
 355 360 365
 Ile Met Tyr Arg Gln Lys Ile Phe Leu Lys Ile
 370 375

<210> 7982

<211> 222

<212> PRT

<213> B.fragilis

<400> 7982

Ser Phe Asn Ser Ser Thr Thr Met Thr Asp Leu Thr Ile Leu Ile Ala
 1 5 10 15
 Val Ile Ala Leu Ala Leu Trp Pro Ile Val Phe Leu Ile Ser Arg Ile
 20 25 30
 Leu His Glu Arg Asn Lys Arg Ala Lys Pro Ser Gly Asp Thr Ala Ser
 35 40 45
 Ala Glu Thr Glu Glu Val Thr Glu Glu Met Thr Thr Ser Ala Leu Ile
 50 55 60
 Met Ser Ile Leu Gln Gln Leu Gly Cys Gln Pro Glu Val Asn Glu Glu
 65 70 75 80
 Asn His Ile Ser Phe Lys Tyr Gln Gly Asp Asp Phe Leu Val Ala Ala
 85 90 95
 Glu Asp Gly Leu Arg Leu Ile Ile Val Trp Asn Pro Trp Trp Ala Ser
 100 105 110
 Ile Ser Ile Asp Asn Gln Ala Leu Pro Tyr Leu Lys Glu Ile Ile Asn
 115 120 125
 Ala Val Asn Met Asn Ser Leu Val Thr Thr Val Tyr Ala Leu Asp Glu
 130 135 140
 Asp Glu Lys Thr Phe Gly Ile His Ser Lys Cys His Met Leu Phe Ala
 145 150 155 160
 Pro Glu Glu Glu Glu Pro Glu Lys Ser Phe Thr Asp Leu Leu Asp Ser
 165 170 175
 Phe Phe Thr Thr His Asn Thr Ile Lys Glu Asn Leu Lys Gln Leu Gly
 180 185 190
 Asn Gly Met Pro Asp Met Glu Lys Lys Glu Arg Val Arg Ile Lys Gly
 195 200 205
 Phe Ala Ala Tyr Lys Asp Asn Ser Thr Glu Leu Lys Gly Glu
 210 215 220

<210> 7983

<211> 87
 <212> PRT
 <213> B.fragilis

<400> 7983

Tyr Lys Asn Arg Pro Lys Val Lys Thr His Leu Gln Lys His Leu Asn
 1 5 10 15
 Asn Asp Lys Phe Arg Glu Asn Leu Ile Thr Phe Gly Gln Thr Asn Leu
 20 25 30
 Ile Asn Lys Ser Ala Trp Phe Arg Lys Glu Gln Glu Lys Asn Asp Ile
 35 40 45
 His Thr Val Thr Ser Asn Asn Tyr Ala Tyr Glu Val Glu Lys Thr Asn
 50 55 60
 Pro Leu Gln Thr Leu Phe Arg Lys Gln Asn Lys Ile Arg Asn Pro Lys
 65 70 75 80
 Thr Asn Tyr Gln Ile Asn Val
 85

<210> 7984
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 7984

Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 7985
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 <213> B.fragilis

<400> 7985

Arg Val Thr Arg Ile Arg Cys Asn Asp Ile Cys Asn Asn His Phe Leu
 1 5 10 15
 Phe Asn Gly Tyr Tyr Gln Gly Phe Ile Tyr Ser Tyr Phe Tyr Lys Lys
 20 25 30
 Val Ile Thr Met Pro Asn Asn Ser Arg Lys Thr Ile Phe Thr Thr Ile
 35 40 45
 Ser Ile Asp Lys Glu Thr Ala Thr Leu Val Gly Lys Ile Cys Lys Arg
 50 55 60
 Tyr Ser Leu Lys Lys Ser Glu Val Val Lys Leu Ala Phe Gly Tyr Ile
 65 70 75 80
 Asp Lys Ala His Ile Asn Pro Ser Glu Ala Pro Glu Ser Val Lys Ser
 85 90 95
 Glu Leu Ala Lys Ile Asn Lys Arg Gln Asp Asp Ile Ile Arg Phe Ile
 100 105 110
 Arg His Tyr Glu Glu Lys Gln Leu Asn Pro Met Ile Arg Val Thr Asn
 115 120 125

Ser Ile Ala Leu Arg Phe Asp Ala Ile Gly Lys Thr Leu Glu Thr Leu
 130 135 140
 Ile Leu Ser Gln Leu Glu Ala Asn Gln Glu Arg Gln Thr Ala Val Leu
 145 150 155 160
 Lys Lys Leu Ser Glu Gln Phe Cys Asn His Ala Asp Val Ile Asn Asn
 165 170 175
 Gln Ser Lys Gln Ile Asn Ala Leu Tyr Gln Ile His Gln Arg Asp Tyr
 180 185 190
 Lys Lys Leu Leu His Leu Ile Gln Leu Tyr Ser Glu Leu Ser Thr Cys
 195 200 205
 Gly Val Met Asp Gly Lys Arg Lys Glu Asn Leu Lys Ala Glu Ile Val
 210 215 220
 Asn Leu Ile Asn Ile
 225

<210> 7986

<211> 110

<212> PRT

<213> B.fragilis

<400> 7986

Thr Ile Lys Ser Lys Ser Met Glu Val Val Thr Ile Glu Lys Arg Thr
 1 5 10 15
 Phe Leu Tyr Ile Cys Glu Arg Phe Thr Glu Phe Ala Lys Arg Thr Glu
 20 25 30
 Ser Leu Cys Asn Thr His Thr Gln Glu Val Glu Asn Trp Leu Asp Ser
 35 40 45
 Gln Glu Val Cys Leu Leu Leu Gly Phe Ser Lys Arg Thr Leu Gln Tyr
 50 55 60
 Tyr Arg Ser Ser Gly Arg Leu Ala Tyr Ser Gln Ile Gly Ser Lys Ile
 65 70 75 80
 Tyr Tyr Lys Ser Ser Asp Val Glu Arg Ile Ile Ala Asp Ser Glu Thr
 85 90 95
 Gln Asn Gln Ser Leu Lys Gln Ala Thr Pro Tyr Glu Lys Asn
 100 105 110

<210> 7987

<211> 346

<212> PRT

<213> B.fragilis

<400> 7987

Leu Asn Lys Ser Arg Asp Ile Thr Pro Thr Ala Ser Leu Ile Lys Asp
 1 5 10 15
 Glu Leu Ile Lys Ala Leu Lys Asn Lys Lys Glu Glu Glu Lys Pro Ile
 20 25 30
 Phe Pro Asp Phe Ile Ser Tyr Ile Asp Tyr Tyr Met Asp Leu Cys Lys
 35 40 45
 Gln Gly Lys Ile Leu Asn Val Asp Gly Thr Lys Leu Ser Ser Ala Thr
 50 55 60
 Leu Ala Thr Tyr Lys Ser Thr Arg Asn Ile Leu Lys Lys Tyr Ala Ala
 65 70 75 80
 Ala Arg Asn Val Thr Ile Arg Ile Glu Glu Val Asp Ser Glu Phe Arg
 85 90 95
 Asn Asp Phe Ile Asn Phe Leu Tyr Asp Thr Lys His His Asn Gly Glu
 100 105 110
 Tyr Lys Leu Asn Ser Ile Gly Lys Phe Ile Lys Thr Ile Lys Val Phe
 115 120 125
 Met Arg His Ala Phe Asp Asn Asn Val Thr Ser Asn Asn Ser Val Phe

130		135		140
Lys Lys Asp Phe Val	Pro Leu Lys Glu Glu Ala Asn Thr Ile Tyr Leu			
145	150	155	160	
Thr Glu Ser Glu Leu	Glu Ala Leu Tyr Asn Leu Asp Leu Pro Ser Asn			
	165	170	175	
Gln Ala Glu Val Arg	Asp Cys Phe Leu Ile Ser Cys Tyr Thr Gly Leu			
	180	185	190	
Arg Tyr Ser Asp Ile	Ser Arg Leu Asp Val Lys His Ile Asn Val Glu			
	195	200	205	
Lys Asn Thr Ile Thr	Ile Val Thr Tyr Lys Thr Arg Asn Gln Val Ile			
	210	215	220	
Ile Pro Ile His Arg	Ile Val Arg Gly Ile Leu Lys Arg Tyr Gly Asn			
225	230	235	240	
Arg Pro Pro Lys Pro	Gln Cys Asn Gln Ser Thr Asn Arg Met Leu Lys			
	245	250	255	
Lys Leu Cys Glu Gln	Ala Gly Ile Thr Glu Ile Ile Ser Tyr Thr Glu			
	260	265	270	
Thr Val Gly Gly Ala	His Lys Glu Cys Thr Ala Arg Lys Cys Asp Lys			
	275	280	285	
Val Thr Thr His Thr	Ala Arg Arg Ser Phe Ala Thr Asn Ala Tyr Lys			
	290	295	300	
Arg Asn Val Pro Thr	Leu Ala Ile Met Ala Ile Thr Gly His Lys Thr			
305	310	315	320	
Glu Thr Ser Phe Met	Lys Tyr Ile Arg Ile Ser Lys Glu Glu Asn Ala			
	325	330	335	
Gln Leu Leu Gln Thr	His Glu Phe Phe Val			
	340	345		

<210> 7988
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7988
Leu Trp Glu Arg Glu Arg Ser Gly Lys Glu Arg Asp Thr Leu Leu Tyr
1 5 10 15
Tyr Ile Gly Glu Ile Tyr Arg Gly Glu Gly Lys Gly Asp Leu Pro Arg
20 25 30
Lys Gly Glu Gly Glu Val Phe Ala Gly Gly Lys Gly Met Phe Arg Gly
35 40 45
Arg Ile Ser Arg Lys Glu Leu Gly Leu Gly Glu Arg
50 55 60

<210> 7989
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7989
Val Met Arg Ser Thr Lys Trp Met Val Gly Ile Ile Leu Phe Ala Cys
1 5 10 15
Val Leu Thr Leu Ile Gly Val Thr Lys Ser Val Arg Ala Lys Asn Gln
20 25 30
Leu Gly Lys Leu Thr Phe Leu Gly Val Glu Ser Leu Ala Asp Gly Glu
35 40 45
Gly Gly Gly Ser Asp Tyr Arg Glu Ala Thr Pro His Asp Cys Asn Tyr
50 55 60
Ser Lys Asp Val Phe Leu Glu Gly Ala Asp His Ile Ile Asn Val Thr
65 70 75 80

Val Pro Gly Lys Lys Gly Ile Cys Asp Gly Thr Asn Gly Thr Cys Asn
 85 90 95
 Ser Trp Pro Cys Arg Glu Val Lys
 100

<210> 7990
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 7990
 Phe Ile Leu Gly Phe Val Ser Ser Ser Phe Gly Phe Asn Phe Thr Thr
 1 5 10 15
 Asp Asn Thr Asp Phe His Arg Leu Ile Ile Tyr Phe Ile Asp Asn Lys
 20 25 30
 Ile Arg Ser Ser Val Lys Ile Cys Val Ile Cys Gly Glu Thr Gly Ser
 35 40 45
 Leu Leu Phe Arg Phe Asn Tyr Ser His Pro Gly Leu Leu Gly Ala Ser
 50 55 60
 Ala Gly Phe Lys Ile Ile Ser
 65 70

<210> 7991
 <211> 370
 <212> PRT
 <213> B.fragilis

<400> 7991
 Phe Trp Gly Gly Ser Cys Val Glu Asp Val Thr Ser Lys Leu Met Arg
 1 5 10 15
 His Leu Trp Tyr His Pro Pro Leu Arg Thr Cys Ser Ser Asp Thr Ile
 20 25 30
 Leu Arg Ala Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser
 35 40 45
 Asp Gln Gly Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr
 50 55 60
 Leu Leu Ile Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu
 65 70 75 80
 Glu Tyr Asp Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr
 85 90 95
 Asp Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val
 100 105 110
 Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn
 115 120 125
 Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala
 130 135 140
 Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys
 145 150 155 160
 Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys
 165 170 175
 His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile
 180 185 190
 Phe Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe
 195 200 205
 Glu Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg
 210 215 220
 Leu Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp
 225 230 235 240
 Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser

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<210> 7992
<211> 111
<212> PRT
<213> B.fragilis
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<210> 7993
<211> 74
<212> PRT
<213> B.fragilis
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<210> 7994
<211> 68
<212> PRT
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<213> B.fragilis

<400> 7994

Gly Lys Phe Ile Gly Glu Arg Glu Lys Gly Ile Cys Arg Glu Arg Gly
 1 5 10 15
 Lys Glu Lys Cys Leu Arg Glu Glu Lys Gly Cys Phe Glu Glu Glu Tyr
 20 25 30
 Arg Gly Arg Asn Trp Gly Trp Glu Arg Asp Lys Leu Lys Asn Arg Trp
 35 40 45
 Gly Ile Asp Gly Ser Trp Thr Gly Asn Gln Thr Arg Thr Glu Arg Glu
 50 55 60
 Leu Asn Glu Asn
 65

<210> 7995

<211> 537

<212> PRT

<213> B.fragilis

<400> 7995

Cys Asp Ala Ile Tyr Asn Lys Thr Asp Leu Asn Arg Leu Lys Ser Met
 1 5 10 15
 Gly His Tyr Glu His Lys Thr Lys Glu Glu Leu Leu Glu Ile Val Cys
 20 25 30
 Lys Leu Glu Lys Lys Val Glu Gly Leu Ser Ser Glu Leu Asp Ser Leu
 35 40 45
 Lys Lys Gly Arg Phe Arg Glu Arg Tyr Ser Thr Arg Ile Leu Asp Ala
 50 55 60
 Leu Pro Asp Met Leu Thr Val Phe Asp His Asn Ala Asn Ile Val Glu
 65 70 75 80
 Leu Ala Ser Ser Pro Thr Thr Asn His Val Glu Gly Thr Thr Ser Asp
 85 90 95
 Ser Ile Ile Asn Ser Asn Val Lys Asp Ile Val Pro Glu Glu Ala Tyr
 100 105 110
 Glu Ser Val Arg His Asn Met Asp Lys Val Ile His Thr Gly Lys Ser
 115 120 125
 Ser Thr Ala Glu His Ser Leu Met Leu Asp Gly Val Leu His His Tyr
 130 135 140
 Glu Asn Arg Ile Phe Pro Leu Asp Asp Gln Tyr Leu Leu Cys Met Cys
 145 150 155 160
 Arg Asp Val Ser Gln Glu Thr Glu Met Ala Lys Ile Asn Glu Thr Gln
 165 170 175
 Arg Ser Glu Ile Val Arg Leu Asn Ser Leu Met Asn Asp Ile Leu Asn
 180 185 190
 Asn Ile Pro Val Tyr Leu Phe Val Lys Asp Thr Gly Asn Asp Phe Arg
 195 200 205
 Tyr Leu Tyr Trp Asn Lys Ala Phe Ala Glu His Ser Gly Ile Ser Val
 210 215 220
 Gln Arg Ala Val Gly Ser Thr Asp Ala Asp Ile Phe Pro Asp Lys Lys
 225 230 235 240
 Asp Ala Glu His Phe Arg Glu Asp Asp Leu Lys Val Met Lys Leu Gly
 245 250 255
 Arg Ile Glu Tyr Leu Glu Asn Tyr Thr Thr Met Ser Gly Glu Val Arg
 260 265 270
 Thr Val Thr Thr Met Lys Thr Val Val Pro Ser Gly Gly Gln His Pro
 275 280 285
 Tyr Ile Ile Gly Val Ser Trp Asp Val Thr Glu Ile Lys Lys Thr Glu
 290 295 300
 Lys Glu Leu Ile Ala Ala Arg Ile Lys Ala Glu Glu Ala Asp Arg Met

305 310 315 320
 Lys Ser Ser Phe Leu Ala Asn Met Ser His Glu Ile Arg Thr Pro Leu
 325 330 335
 Asn Ala Ile Val Gly Phe Ser Lys Leu Ile Ile Glu Ala Asp Asn Glu
 340 345 350
 Cys Glu Lys Arg Gln Tyr Ala Asp Ile Val Glu His Asn Ser Thr Val
 355 360 365
 Leu Leu Asn Leu Phe Asn Asp Ile Leu Asp Leu Ser Ala Leu Glu Ala
 370 375 380
 Gly Ser Leu Glu Leu Ser Tyr His Pro Val Arg Leu Lys Asp Ile Cys
 385 390 395 400
 Leu Gln Leu Tyr Glu Leu His Val Lys Ser Val Lys Pro Glu Val Arg
 405 410 415
 Leu Val Leu Asp Glu Val Asp Ser Gln Leu Cys Ile Gln Gly Asp Trp
 420 425 430
 Glu Arg Ile Ser Gln Val Leu Val Asn Leu Ile Thr Asn Ala Ile Lys
 435 440 445
 Phe Thr Ser Val Gly Glu Ile His Phe Gly Phe Gln Lys Lys Ala Asp
 450 455 460
 Met Val Gln Phe Tyr Met Ser Asp Thr Gly Lys Gly Ile Pro Ala Glu
 465 470 475 480
 Arg Val Ala Thr Ile Phe Gln Arg Phe Gly Lys Ile Asp Asp Phe Val
 485 490 495
 Gln Gly Thr Gly Leu Gly Leu Thr Ile Cys Arg Met Leu Val Glu Lys
 500 505 510
 Met Gly Gly Arg Ile Trp Val Arg Ser Lys Gln Gly Glu Gly Thr Val
 515 520 525
 Phe Tyr Phe Thr Leu Pro Met Ala Lys
 530 535

<210> 7996

<211> 146

<212> PRT

<213> B.fragilis

<400> 7996

Lys Ser Tyr Ile Ser Ala Ser Arg Gly Lys Asn Ala Leu Lys Asn Ser
 1 5 10 15
 Tyr Leu His Lys Val Leu Ala Ile Ile Asn Val Glu Leu Glu Leu Leu
 20 25 30
 Ser Leu Lys Ile Lys His Pro Glu Ser Phe Val Ser Pro Ile Ser Pro
 35 40 45
 Thr Ser Glu Ser Asp Leu Tyr Val Ile Pro Lys Ser Lys Asp Leu Gly
 50 55 60
 Ile Ile Gly Ile Ala Glu Ile Val Ile Gly Leu Ser Phe Leu Gly Glu
 65 70 75 80
 Val Val Gly Lys Asp Gly Lys Pro Val Pro Leu Val Arg Leu Ala His
 85 90 95
 Gly Phe Glu Val Leu Phe Asn Leu Lys Phe Gly Ser Ile Tyr Asp Lys
 100 105 110
 Leu Asp Ala Ile Phe Met Arg Lys Pro Phe Asn Leu Thr Lys Thr Leu
 115 120 125
 Asp Ala Leu Lys Ser Ala Ile Asn Lys Glu Ala Arg Lys Arg Ala Asn
 130 135 140
 Lys His
 145

<210> 7997

<211> 692

<212> PRT

<213> B.fragilis

<400> 7997

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Ser Tyr Asn Met Gln Ser Met Ile Thr Thr Gln Leu Leu Arg Pro Gln
1      5      10      15
Ser Ile Val Val Gly Ala Ser Asn Thr His Lys Pro Gly Gly
20      25      30
Ala Ile Leu Lys Asn Leu Ile Asn Gly Gly Tyr Gln Gly Glu Leu Arg
35      40      45
Ala Val Asn Pro Lys Glu Thr Glu Val Gln Gly Val Pro Ser Phe Ala
50      55      60
Asp Ala Lys Glu Leu Pro Asp Thr Asp Leu Ala Ile Leu Ala Ile Pro
65      70      75      80
Ala Val Leu Cys Pro Glu Val Val Glu Thr Leu Ala Ala Glu Lys Gln
85      90      95
Thr Arg Ala Phe Ile Ile Leu Ser Ala Gly Phe Gly Glu Glu Thr Gln
100     105     110
Glu Gly Ala Leu Leu Glu Glu Arg Ile Leu Glu Thr Val Asn Lys Tyr
115     120     125
Gly Ala Ser Leu Ile Gly Pro Asn Cys Ile Gly Leu Met Asn Thr Trp
130     135     140
His His Ser Val Phe Thr Gln Pro Ile Pro Asn Leu Asn Pro His Gly
145     150     155     160
Val Asp Leu Ile Ser Ser Ser Gly Ala Thr Ala Val Phe Ile Leu Glu
165     170     175
Ser Ala Val Thr Lys Gly Leu Gln Phe Asn Ser Val Trp Ser Val Gly
180     185     190
Asn Ala Lys Gln Ile Gly Val Glu Asp Val Leu Gln Tyr Met Asp Glu
195     200     205
Asn Phe Asp Val Arg Lys Asp Ser Lys Ile Lys Leu Ile Tyr Ile Glu
210     215     220
Ser Ile Lys Asn Pro Asp Arg Leu Leu Phe His Ala Ser Ser Leu Ile
225     230     235     240
Arg Lys Gly Cys Lys Ile Ala Ala Ile Lys Ala Gly Ser Ser Glu Ser
245     250     255
Gly Ser Arg Ala Ala Ser Ser His Thr Gly Ala Ile Ala Ser Ser Asp
260     265     270
Ser Ala Val Glu Ala Leu Phe Arg Lys Ala Gly Ile Val Arg Cys Tyr
275     280     285
Ser Arg Gly Glu Leu Thr Thr Val Gly Cys Ile Phe Thr Leu Pro Glu
290     295     300
Leu Lys Gly Lys Asn Phe Ala Ile Val Thr His Ala Gly Gly Pro Gly
305     310     315     320
Val Met Leu Thr Asp Ala Leu Ser Lys Gly Gly Leu Asn Val Pro Lys
325     330     335
Leu Glu Gly Pro Val Ala Glu Glu Leu Lys Ser Lys Leu Phe Pro Gly
340     345     350
Ala Ser Val Gly Asn Pro Ile Asp Ile Leu Ala Thr Gly Thr Pro Glu
355     360     365
His Leu Ser Ile Ala Ile Asp Tyr Cys Glu Glu Lys Phe Glu Asn Ile
370     375     380
Asp Ala Ile Leu Ala Ile Phe Gly Thr Pro Gly Leu Val Thr Met Phe
385     390     395     400
Glu Thr Tyr Glu Val Leu His Gln Lys Met Leu Thr Cys Lys Lys Pro
405     410     415
Leu Phe Pro Val Leu Pro Ser Val Arg Thr Ala Gly Glu Glu Val Ala
420     425     430
Phe Phe Leu Glu Lys Gly His Val Asn Phe Ala Asp Glu Val Met Leu

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435 440 445
 Gly Thr Ala Leu Ser Arg Ile Ile Asn Ala Pro Lys Pro Ala Val Pro
 450 455 460
 Glu Ile Glu Leu Phe Gly Val Asp Val Pro Arg Ile Arg Arg Ile Ile
 465 470 475 480
 Asp Ser Ile Pro Gln Asn Gly Tyr Ile Glu Pro His Tyr Val Gln Ala
 485 490 495
 Leu Leu His Ser Ala Gly Ile Pro Val Val Glu Glu Phe Val Ser Gly
 500 505 510
 Asn Lys Asp Glu Val Leu Ala Phe Ala Arg Arg Cys Gly Phe Pro Val
 515 520 525
 Val Ala Lys Val Val Gly Pro Val His Lys Ser Asp Val Gly Gly Val
 530 535 540
 Val Leu Asn Ile Lys Gly Glu Gln His Leu Ala Phe Glu Phe Asp Arg
 545 550 555 560
 Met Met Gln Ile Pro Glu Ala Arg Ala Ile Met Val Gln Pro Met Leu
 565 570 575
 Lys Gly Thr Glu Met Phe Ile Gly Ala Lys Tyr Glu Glu Lys Phe Gly
 580 585 590
 His Val Val Leu Cys Gly Leu Gly Gly Ile Phe Val Glu Val Leu Lys
 595 600 605
 Asp Val Ser Ser Gly Leu Ala Pro Leu Ser Tyr Glu Glu Ala Tyr Ser
 610 615 620
 Met Ile His Ser Leu Arg Ala Tyr Lys Ile Ile Gln Gly Thr Arg Gly
 625 630 635 640
 Gln Lys Gly Val Asn Glu Asp Lys Phe Ala Glu Ile Ile Val Arg Leu
 645 650 655
 Ser Thr Leu Leu Arg Phe Ala Thr Glu Ile Lys Glu Met Asp Ile Asn
 660 665 670
 Pro Leu Leu Ala Thr Glu Lys Glu Val Val Ala Val Asp Ala Arg Ile
 675 680 685
 Arg Ile Glu Lys
 690

<210> 7998

<211> 282

<212> PRT

<213> B.fragilis

<400> 7998

Glu Lys Asp Met Lys Lys Leu Gly Ile Phe Lys Tyr Lys Tyr Val Gly
 1 5 10 15
 Glu Asn Val Ile Gln Ser Gly Phe Thr Val Leu Asp Lys Ile Thr Tyr
 20 25 30
 Gly Trp Lys Asn Gly Glu Leu Ile Val Ile Gly Gly Arg Pro Ala Met
 35 40 45
 Gly Lys Thr Ala Phe Gly Leu Ser Leu Val Arg Asn Ile Ala Ile Ile
 50 55 60
 Asp Arg Ile Pro Thr Ala Tyr Phe Ser Leu Glu Met Ser Ser Val Gln
 65 70 75 80
 Phe Met Asn Arg Phe Leu Leu Asn Leu Ser Gly Ile Glu Arg Phe Gln
 85 90 95
 Ser Lys Pro Tyr Asn Lys Lys Glu Gln Ala Ile Leu Asp Asp Ala Glu
 100 105 110
 Lys Val Ile Asp Asp Ala Pro Ile Phe Leu Asp Asp Thr Pro Ser Leu
 115 120 125
 Ser Val Gln Glu Leu Arg Thr Arg Ala Phe Arg Leu Val Arg Glu Tyr
 130 135 140
 Gln Val Lys Leu Ile Ile Ile Asp Tyr Leu Gln Leu Met Asn Ala Ser

145 150 155 160
 Gly Met Val Phe Asn Asn Arg Lys Glu Glu Ile Ser Thr Ile Thr Arg
 165 170 175
 Ser Leu Lys Ala Leu Ala Met Glu Leu Asn Ile Pro Ile Ile Ala Phe
 180 185 190
 Ser Gln Leu Asn Arg Gly Val Glu Ser Arg Glu Gly Ile Glu Gly Lys
 195 200 205
 Arg Pro Gln Leu Arg Asp Leu Arg Glu Ser Gly Asn Ile Glu Gln Asp
 210 215 220
 Ala Asp Met Val Cys Phe Leu His Arg Pro Glu Tyr Tyr Lys Ile Tyr
 225 230 235 240
 Gln Asp Asp Lys Gly Asn Asp Leu His Gly Met Ala Glu Ile Ile Val
 245 250 255
 Ser Lys Asn Arg Asn Gly Lys Thr Gly Asp Ala Leu Leu Lys Phe Ser
 260 265 270
 Gly Gln Phe Leu Arg Phe Glu Asn Pro Thr
 275 280

<210> 7999

<211> 260

<212> PRT

<213> B.fragilis

<400> 7999

Gln Glu Asp Met His Ser His Pro Ser Pro Lys Phe Ser Val Ile Thr
 1 5 10 15
 Val Thr Tyr Asn Ala Glu Lys Val Leu Glu Asp Thr Val Gln Ser Val
 20 25 30
 Ile Ser Gln Thr Tyr His His Val Glu Tyr Ile Ile Ile Asp Gly Ala
 35 40 45
 Ser Lys Asp Gly Thr Leu Glu Ile Val Asn Arg Tyr Arg Asp Arg Ile
 50 55 60
 Asn Gln Leu Val Ser Glu Pro Asp Lys Gly Leu Tyr Asp Ala Met Asn
 65 70 75 80
 Lys Gly Ile Ala Leu Ala Thr Gly Asp Tyr Leu Cys Phe Leu Asn Ala
 85 90 95
 Gly Asp Ser Phe His Glu Asp Asp Thr Leu Gln Lys Ile Val His Ser
 100 105 110
 Ile Asn Gly Asn Glu Leu Pro Asp Ile Leu Tyr Gly Glu Thr Ala Leu
 115 120 125
 Val Asp Ala Glu Arg His Phe Leu Arg Met Arg Arg Leu Ser Ala Pro
 130 135 140
 Glu Thr Leu Asn Trp Lys Ser Phe Lys Gln Gly Met Leu Val Cys His
 145 150 155 160
 Gln Ala Phe Phe Pro Arg His Thr Leu Ile Glu Pro Tyr Asp Leu Gln
 165 170 175
 Tyr Arg Phe Ser Ala Asp Phe Asp Trp Cys Ile Arg Ile Met Lys Lys
 180 185 190
 Ala Arg Thr Phe His Asn Thr His Leu Ile Leu Ile Asp Tyr Leu Ala
 195 200 205
 Glu Gly Met Thr Thr Gln Asn His Lys Ala Ser Leu Leu Glu Arg Phe
 210 215 220
 Arg Ile Met Thr Arg His Tyr Gly Leu Leu Ser Thr Leu Ala Tyr His
 225 230 235 240
 Ala Trp Phe Val Val Arg Ser Leu Ser Arg Asn Ser Ala Thr Pro Ser
 245 250 255
 Asp Ala Pro Phe
 260

<210> 8000
 <211> 380
 <212> PRT
 <213> B.fragilis

<400> 8000

Ser Asp Arg Ile Met Lys Lys Ile Leu Leu Val Phe Gly Thr Arg Pro
 1 5 10 15
 Glu Ala Ile Lys Met Ala Pro Leu Val Lys Ala Leu Gln Arg Asp Thr
 20 25 30
 Glu His Phe Glu Thr Lys Val Cys Val Thr Ala Gln His Arg Gln Met
 35 40 45
 Leu Asp Gln Val Leu Glu Val Phe Asp Ile Ile Pro Asp Tyr Asp Leu
 50 55 60
 Asn Ile Met Ala Pro Asn Gln Asp Leu Tyr Asp Ile Thr Thr Lys Val
 65 70 75 80
 Leu Leu Gly Leu Arg Asp Val Leu Lys Asp Phe Cys Pro Asp Thr Val
 85 90 95
 Leu Val His Gly Asp Thr Thr Thr Ser Met Ala Ala Ser Leu Ala Ala
 100 105 110
 Phe Tyr Arg Gln Val Ala Val Gly His Val Glu Ala Gly Leu Arg Thr
 115 120 125
 Tyr Asp Met Leu Ser Pro Trp Pro Glu Glu Met Asn Arg Gln Val Thr
 130 135 140
 Asp Arg Ile Cys Thr Tyr Tyr Phe Ala Pro Thr Gly Lys Ser Lys Gln
 145 150 155 160
 Asn Leu Leu Gln Glu Asn Ile Asp Ala Lys Lys Ile Phe Val Thr Gly
 165 170 175
 Asn Thr Val Ile Asp Ala Leu Leu Met Ala Val Asp Ile Ile Ser Lys
 180 185 190
 Lys Pro Gly Ile Lys Glu Lys Leu His Gln Glu Leu Arg Asp Lys Gly
 195 200 205
 Tyr Glu Val Gly Gln Arg Glu Tyr Ile Leu Val Thr Gly His Arg Arg
 210 215 220
 Glu Asn Phe Gly Glu Gly Phe Leu His Ile Cys Lys Ala Ile Arg Glu
 225 230 235 240
 Leu Ala Ala Leu His Pro Glu Met Asp Ile Val Tyr Pro Val His Leu
 245 250 255
 Asn Pro Asn Val Gln Lys Pro Val Tyr Glu Leu Leu Ser Gly Val Asp
 260 265 270
 Asn Val Tyr Leu Ile Ser Pro Leu Asp Tyr Leu Pro Phe Ile Tyr Ala
 275 280 285
 Met Gln His Ser Thr Leu Leu Leu Thr Asp Ser Gly Gly Val Gln Glu
 290 295 300
 Glu Ala Pro Ser Leu Gly Lys Pro Val Leu Val Met Arg Asn Thr Thr
 305 310 315 320
 Glu Arg Pro Glu Ala Val Glu Ala Gly Thr Val Lys Leu Val Gly Thr
 325 330 335
 Asp Ala Glu Ala Ile Val Ser Asn Val Thr Glu Leu Leu Arg Asn Lys
 340 345 350
 Glu Leu Tyr Arg Arg Met Ser Glu Thr His Asn Pro Tyr Gly Asp Gly
 355 360 365
 His Ala Cys Glu Arg Ile Leu Ser Val Leu Thr Arg
 370 375 380

<210> 8001
 <211> 1014
 <212> PRT
 <213> B.fragilis

<400> 8001

Asp Lys Leu Ile Met Lys Leu Val Lys Tyr Phe Leu Gln Lys Arg Ala
 1 5 10 15
 Val Thr Ile Leu Leu Val Leu Val Leu Ala Gly Gly Leu Phe Ser
 20 25 30
 Tyr Phe Lys Met Gly Lys Leu Glu Asp Ala Pro Phe Thr Ile Lys Gln
 35 40 45
 Ala Leu Val Leu Thr Ser Tyr Pro Gly Ala Ser Pro Ala Glu Val Gln
 50 55 60
 Ser Gln Val Thr Asp Ile Leu Glu Glu Ala Ile Gln Ser Leu Gly Glu
 65 70 75 80
 Leu Tyr Tyr Leu Lys Thr Glu Asn Arg Ala Gly Leu Ser Lys Ile Thr
 85 90 95
 Val Tyr Val Lys Lys Glu Ile Arg Ala Glu Glu Met Gln Gln Leu Trp
 100 105 110
 Asp Lys Leu Arg Arg Lys Val Asn Asp Val Gln Asp Lys Leu Pro Ala
 115 120 125
 Gly Ala Gly Thr Ser Ile Val Asn Asp Asp Phe Gly Asp Val Leu Gly
 130 135 140
 Val Phe Tyr Gly Leu Thr Gly Asp Gly His Thr Tyr Arg Glu Leu Glu
 145 150 155 160
 Asp Gln Ala Lys Phe Ile Lys Asn Glu Leu Leu Lys Val Lys Asp Val
 165 170 175
 Ala Lys Ile Glu Ile Tyr Gly Val Gln Thr Pro Thr Ile Asp Val Leu
 180 185 190
 Ile Ser Pro Ser Val Met Ala Gln Ser Gly Val Thr Thr Ala Asp Met
 195 200 205
 Met Arg Ala Phe Glu Thr Gln Asn Lys Met Val Asp Ala Gly Gly Ile
 210 215 220
 Asn Ala Gly Thr Asn Arg Ile Arg Ile Glu Ser Thr Gly Asn Phe Tyr
 225 230 235 240
 Ser Leu Asp Asp Ile Arg Asp Leu Thr Ile Val Ser Arg Thr Gly Glu
 245 250 255
 His Phe Arg Leu Ala Asp Ile Ala Gln Ile Glu Glu Gly Tyr Gln Thr
 260 265 270
 Pro Pro Ala Asn Gln Met Arg Ile Asn Gly Ser Pro Ala Val Gly Ile
 275 280 285
 Ala Ile Ser Thr Val Pro Thr Gly Asn Val Val Asp Met Ala Glu Asp
 290 295 300
 Ile Lys Met Arg Ile Gly Glu Leu Ser Gln Ser Met Pro Asp Gly Tyr
 305 310 315 320
 Glu Leu Ile Ser Ile Tyr Asp Gln Gly Tyr Glu Ser Ala Val Ala Asn
 325 330 335
 Gln Gly Phe Ile Leu Asn Leu Ile Ile Ser Val Ile Thr Val Val Ala
 340 345 350
 Ile Leu Leu Phe Phe Ile Gly Phe Lys Asn Gly Leu Leu Ile Gly Ser
 355 360 365
 Gly Leu Val Phe Ser Ile Phe Ala Thr Leu Ile Val Met Met Ala Cys
 370 375 380
 Asp Ile Ala Leu Gln Arg Met Ser Leu Ala Ala Ile Ile Ile Ala Met
 385 390 395 400
 Gly Met Leu Val Asp Asn Ala Ile Val Val Ser Asp Ser Ala Leu Ile
 405 410 415
 Asn Met Glu Arg Gly Met Arg Lys Arg Val Ala Ile Met Arg Ala Cys
 420 425 430
 Ser Ser Thr Ala Leu Pro Leu Leu Ala Ala Thr Val Ile Ala Ile Leu
 435 440 445
 Thr Phe Leu Pro Ile Tyr Tyr Ser Pro His Ile Thr Gly Glu Leu Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

[illegible]

Val Leu Leu Asp Glu Ile Asp Val Gln Arg Arg Glu Gly Val Val Pro
 930 935 940
 Tyr Thr Ala Val Ile Glu Ser Thr Val Ser Arg Thr Arg Pro Val Leu
 945 950 955 960
 Met Ala Ala Thr Thr Thr Ile Leu Gly Met Val Pro Leu Leu Phe Asp
 965 970 975
 Ile Ala Phe Gly Gly Met Ala Ala Thr Ile Ile Phe Gly Leu Thr Phe
 980 985 990
 Ala Thr Leu Leu Thr Leu Phe Val Thr Pro Ala Leu Tyr Ala Ile Phe
 995 1000 1005
 Tyr Lys Ile Lys Glu Lys
 1010

<210> 8002
 <211> 122
 <212> PRT
 <213> B.fragilis

<400> 8002
 His Gly Thr Ile Ile Tyr Ile Ser Phe Val Pro Leu Ile Tyr Arg Cys
 1 5 10 15
 Ile Val Asn Arg Gly Phe Asn Ser Asn Leu Lys Lys Met Lys Asn Glu
 20 25 30
 Gly Ile Ile Leu Ile Lys Gly Thr Glu Leu Gln Asp Leu Ile Asn Lys
 35 40 45
 Ala Val Ala Leu Ala Phe Glu Asn Val Cys Leu Ala Asp Arg Arg Lys
 50 55 60
 Ala Lys Thr Ala Glu Lys Leu Leu Ser Arg Asn Glu Ala Ser Lys Ala
 65 70 75 80
 Leu Lys Ile Ser Leu Ser Ser Leu Asn Arg Arg Val Asn Asp Gly Ser
 85 90 95
 Ile Lys Cys Tyr Lys Ile Gly Ala Arg Ser Phe Phe Lys Glu Ser Glu
 100 105 110
 Leu Glu Asn Leu Leu Thr Phe Leu Asn Lys
 115 120

<210> 8003
 <211> 213
 <212> PRT
 <213> B.fragilis

<400> 8003
 His Pro Asn Met Lys Lys Leu Tyr Ser Leu Leu Leu Thr Ala Leu Phe
 1 5 10 15
 Ala Leu Pro Ala Ala His Val His Ala Thr Asp Tyr Thr Gln Gly Leu
 20 25 30
 Ser Ile Trp Phe Asp Thr Pro Asn Thr Leu Gln Gly Arg Ala Ile Trp
 35 40 45
 Tyr Gly Ser Arg Pro Asp Leu Trp Lys Gly Glu Ser Lys Pro Glu Ser
 50 55 60
 Ala Gly Asp Thr Ala Arg Asn Pro Asp Ala Asn Trp Glu Ser Gln Ser
 65 70 75 80
 Leu Pro Ile Gly Asn Gly Ser Ile Gly Ala Asn Ile Met Gly Ser Ile
 85 90 95
 Glu Ala Glu Arg Ile Thr Phe Asn Glu Lys Thr Leu Trp Arg Gly Gly
 100 105 110
 Pro Asn Thr Ser Arg Gly Ala Asp Ala Tyr Trp Asn Val Asn Lys Gln
 115 120 125
 Ser Ala His Val Leu Lys Glu Ile Arg Gln Ala Phe Thr Asp Gly Asp

130 135 140
 Gln Lys Lys Ala Glu Met Leu Thr Arg Lys Asn Phe Asn Ser Glu Val
 145 150 155 160
 Pro Tyr Glu Ser Asn Arg Glu Lys Pro Phe Arg Phe Gly Asn Phe Thr
 165 170 175
 Thr Met Gly Glu Leu Tyr Ile Glu Thr Gly Leu Ser Thr Val Asn Met
 180 185 190
 Ser Asp Tyr Lys Arg Ile Leu Ser Met Asp Ser Ala Leu Gly Arg Cys
 195 200 205
 Thr Ile Gln Glu Arg
 210

<210> 8004
 <211> 396
 <212> PRT
 <213> B.fragilis

<400> 8004

Val Met Asn Ile Leu Ile Gln Gln Thr Lys Ala Phe Pro His Arg Ala
 1 5 10 15
 Asn Ser Phe Tyr Trp Phe Tyr Ala Gln Leu Thr Glu Trp Leu Thr Ala
 20 25 30
 His Gly Val Asp Ser Lys Leu Tyr Phe Ser Tyr Leu Glu Leu Ala Asp
 35 40 45
 Ser Glu Phe Glu Asn Gly Leu Leu Leu Pro Asp His Tyr Ser Gln Phe
 50 55 60
 Tyr Thr Pro Arg Asn Ile Glu Ala Ile Cys Arg Phe Ile Ile Asp Lys
 65 70 75 80
 Gln Ile Asp Val Ile Leu Asp Tyr Ser His Val Ile Pro Gly Asp Thr
 85 90 95
 Arg Lys Tyr Tyr Leu Glu Ile Lys Lys Arg Asn Pro Gly Ile Lys Ile
 100 105 110
 Cys Thr Met Ile His Asn Cys Pro Ser His Thr Thr Gln Leu Lys Gln
 115 120 125
 Tyr Glu Leu Ser Thr Leu Arg Phe Lys Asp Val His Gly Pro Lys Lys
 130 135 140
 Leu Phe Gln Trp Met Leu Pro Gln Leu Tyr Ile Ser Leu Leu Lys Lys
 145 150 155 160
 Val Val Ser His Gln Asn Arg Ser Ala Tyr Asp Thr Leu Asp Glu Val
 165 170 175
 Val Leu Leu Ser Pro Ala Tyr Ile Pro Glu Phe Lys Lys Leu Ile Gly
 180 185 190
 Lys Lys Asp Ala Trp Lys Leu Ser Ala Ile Pro Asn Ala Ile Lys Pro
 195 200 205
 Val His Ser Asn Ile Pro Ile Glu Glu Lys Asp Lys Glu Ile Ile Phe
 210 215 220
 Val Gly Arg Met Ala Thr Glu Lys Ala Leu Pro Lys Leu Leu Lys Ile
 225 230 235 240
 Trp Gly Met Val Gln Asp Lys Leu Pro Asp Trp Lys Leu Thr Leu Val
 245 250 255
 Gly Asp Gly Pro Gln Phe Gly Thr Cys Arg Gln Ile Ile Ala Glu Lys
 260 265 270
 Lys Leu Lys Arg Val Cys Leu Thr Gly His Gln Met Ser Ile Pro Tyr
 275 280 285
 Ile Asp Arg Ala Arg Ile Leu Cys Leu Thr Ser Val Ile Glu Gly Leu
 290 295 300
 Pro Thr Val Phe Thr Glu Ala Met Ser Leu Gly Val Ile Pro Ile Gly
 305 310 315 320
 Phe Asp Ser Phe Asn Ala Ile Tyr Asp Met Ile Asp Asp Gly Ile Asp

Arg Gln Gly Gly Gly Pro Gly Glu Tyr Ser Ile Ile Ser Lys Phe Thr
 115 120 125
 Ile Thr Gly Asp Ser Leu Leu Ile Gln Asp Tyr Asn Leu His Lys Tyr
 130 135 140
 Leu Val Tyr Ser Ile Lys Glu Asp Cys Phe Val Ser Asp Ile Arg Tyr
 145 150 155 160
 Glu Pro His His His Ser Ile Val Ala Tyr Pro Asp Ile Leu Tyr Phe
 165 170 175
 Val Ser Gly Tyr Phe Pro Ala Asp Ala Gly Cys Tyr Asn Leu Tyr Arg
 180 185 190
 Phe Asp Leu Arg Asn Ser Ser Met Glu Ser Tyr Leu Pro Phe Ser Gln
 195 200 205
 Lys Ile Ala Val Asn Arg Ser Ala Trp Ser Ile Glu Glu Gln Cys Ser
 210 215 220
 Arg Val Cys Glu Arg Ser Phe Val Phe Tyr Ala Leu Ser Asp Thr Ile
 225 230 235 240
 Tyr Gln Val Asn Lys Asp Lys Ala Ile Pro Val Tyr Thr Leu Asn Phe
 245 250 255
 Ser Lys Arg Ser Ile Pro Asp Asp Phe Lys Glu Ser His Ser Gly Asp
 260 265 270
 Glu Ile Met Asp Leu Ala Phe Gln Glu Gly Tyr Val Arg Gly Pro Ile
 275 280 285
 His Leu Gln His Ser Asp Arg Trp Met Leu Gly Thr Tyr Val Asp Gly
 290 295 300
 Lys Glu Tyr Arg Tyr Met Leu Ile Asp Lys Lys Thr Gly Gln Tyr Gln
 305 310 315 320
 Ile Gly Lys Gln Leu Gly Ala Arg Lys Glu Gly Asn Leu Thr Ile Pro
 325 330 335
 His Asn Phe Leu Ile Glu Asp Asn Tyr Phe Ile Ser Trp Leu Pro Val
 340 345 350
 Arg Leu Leu Lys Leu Trp Lys Asn His Phe Ser Pro Asn Thr Phe Arg
 355 360 365
 Asp Lys Gly Arg Val Gly Lys Trp Glu Arg Leu Ile Asp Ser Leu Asp
 370 375 380
 Ile Asp Asp Asn Pro Val Leu Ile Lys Cys Lys Ile Arg Asn Asn Glu
 385 390 395 400
 Thr

<210> 8007

<211> 85

<212> PRT

<213> B.fragilis

<400> 8007

Tyr Ser Leu Ile Ile Lys His Phe Met Leu Met Asn Asp Leu Ser Lys
 1 5 10 15
 Thr Arg Ile Ile Ile Leu Leu Thr Asp Ser Ser Gln Lys Val Thr Asp
 20 25 30
 Thr Glu Met Gln Asp Ala Tyr Asp Glu Phe Ile Arg Cys Ile Ala Thr
 35 40 45
 Ile Gly Asn Ser Lys Asp Asn Ser Asn Ile Phe Arg Met Leu Asn Leu
 50 55 60
 Thr Arg Ile Glu Ile Ala Pro Leu Lys Glu Leu Tyr Gln Cys Glu Gln
 65 70 75 80
 Gly Glu Lys Cys Ala
 85

<210> 8008

<211> 339
 <212> PRT
 <213> B.fragilis

<400> 8008

Glu Asn Thr Met Lys Val Thr Ile Tyr Pro Tyr Ser Ile Asn Lys Ser
 1 5 10 15
 Asp Ile Arg Val Asn Pro Tyr Ile Ser Asp Phe Ile His Ala Leu Gln
 20 25 30
 Gln Asn Gly Ile Thr Ile Ala Asn Pro Pro His Lys Asn Pro Leu Phe
 35 40 45
 Ser Leu Ile Pro Arg Lys Ala Asp Ser Asp Ala Tyr Ile Phe His Trp
 50 55 60
 Pro Glu Asn Val Pro Asp Tyr Lys Tyr Gly Met Leu Gln Thr Leu Ala
 65 70 75 80
 Ala Ile Trp Leu Leu Phe Lys Ile Lys Cys His His Lys Lys Ile Ile
 85 90 95
 Trp Phe Leu His Asn Lys Gln Pro His Val Met Lys His Arg Trp Ser
 100 105 110
 Lys Lys Leu Leu Ile His Leu Leu Leu Arg Lys Ala Asp Leu Ile Val
 115 120 125
 Thr His Ala Thr Glu Gly Ile Lys Val Val Gln Asp Gln Tyr Pro Lys
 130 135 140
 Ala Val Ala Lys Thr Val Phe Leu His His Pro Thr Lys Asn Arg Ile
 145 150 155 160
 Glu Glu Tyr Ile Pro Gln Pro Pro Glu Thr Asp Leu Leu Ile Trp Gly
 165 170 175
 Asn Ile Ser Arg Tyr Lys Gly Val Pro Glu Phe Val Arg Phe Ala Thr
 180 185 190
 Gln His Ser Leu Lys Leu Lys Thr Lys Ile Ile Gly Lys Cys Ser Ser
 195 200 205
 Gln Glu Leu Leu Glu Glu Leu Arg Lys Glu Ser Asn Glu Met Ile Ser
 210 215 220
 Ile Glu Asp Arg Ser Ile Pro Phe Glu Glu Leu Lys Gln Glu Ile Arg
 225 230 235 240
 Arg Ser Arg Phe Val Leu Val Pro Tyr Ala Ala Glu Ser Ile Leu Ser
 245 250 255
 Ser Gly Ile Leu Met Asp Ser Leu Ser Phe Gly Ala Lys Val Ile Gly
 260 265 270
 Pro Ala Val Gly Ser Phe Arg Asp Tyr Ala Ala Glu Pro Leu Leu Asn
 275 280 285
 Val Tyr Thr Phe His Thr Phe Asp Asp Ile Gln Glu Leu Val Asp Lys
 290 295 300
 Ala Asn Glu Ala Thr Asp Ile Ala Gly Tyr Asn Arg Phe Leu Asn Ala
 305 310 315 320
 His Ser Trp Asn Glu Phe Gly Lys Lys Phe Gln Asn Leu Leu Gln Lys
 325 330 335
 Ile Ile Gln

<210> 8009
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8009

Phe Tyr Gln Ile Lys Ile Ser Pro Glu Glu Lys Tyr Phe Phe Arg Gly
 1 5 10 15
 Tyr Phe Cys Phe Ile Thr Gln Ser Ser Leu His Pro Glu Lys Tyr Ile

20 25 30
 His His Thr Glu Ile Ser Lys Pro Asn Val Thr Ala Ile Arg Ile Leu
 35 40 45
 Leu Leu Thr Phe Tyr Tyr Leu Tyr Cys Lys Ile Gln Lys Val Ser Tyr
 50 55 60
 Leu Thr Phe Trp Tyr Phe Ser Thr Pro Thr Phe Leu Asn Ile Asn Thr
 65 70 75 80
 Ile Lys Gln Asn Arg Ile Glu Asn Arg Asn Glu Lys Thr Lys Pro
 85 90 95

<210> 8010
 <211> 306
 <212> PRT
 <213> B.fragilis

<400> 8010

Leu Leu Lys Ile Ile Thr Met Met Thr Lys Arg Asp Phe Val Pro Ser
 1 5 10 15
 Asn Ser Phe Gly Gln Tyr Val Ser Pro Tyr Arg Arg Leu Asp Asp Gln
 20 25 30
 Ile Ala Ile Phe His Phe Leu Cys Lys Phe Phe Pro Ala Asp Leu Val
 35 40 45
 Gln Glu Val Leu Val Trp Leu Gly Val Met Ala Thr Tyr Arg Phe Cys
 50 55 60
 Cys Asn Gly Lys Phe Gly Ala Leu Phe Lys Phe Val Asp Tyr Ser Asp
 65 70 75 80
 Thr Ile Arg Arg Val Gln Glu Val Cys Leu Asp Pro Glu Thr Gly Arg
 85 90 95
 Ile Leu Gln Ser Gly Asp Ala Arg Ala Gln Ile Ala Asn Thr Leu Arg
 100 105 110
 Pro Asn Ala Thr Tyr Ser Cys Met Pro Glu Gly Tyr Lys Ala Cys Met
 115 120 125
 Ile Glu Lys Glu Leu Met Asn Ser Lys Ser Glu Val Val Tyr Asp Cys
 130 135 140
 Lys Pro Cys Phe Phe Gly Gln Ala Gln Cys Phe Glu His Ala Arg Tyr
 145 150 155 160
 Asp Arg Pro Tyr Gly Ile Val Lys His Val Val Ser Ala Ile Phe Leu
 165 170 175
 Asn Ile Cys Gly Tyr Lys Asp Lys Asn Ser Pro Val Trp Leu Ala Thr
 180 185 190
 Gly Gly Ser Glu Leu Thr Gly Cys Asp Leu Ser Lys Ala Asp Ile Leu
 195 200 205
 Lys Phe Phe Gln Phe Lys Glu Met Ile Leu Phe Pro Gly Ala Glu Leu
 210 215 220
 Tyr Asp Gln Ser Lys Glu Ile Glu Gln Gln Ile Arg Leu Met Gly Met
 225 230 235 240
 Lys Ala Arg Thr Ser Tyr Phe Met Glu Lys Val Glu Tyr Lys Asp Lys
 245 250 255
 Gln Arg Gly Asp Asp Ile Ser Asn Tyr Ile Ile Ser Glu Ile Asn Arg
 260 265 270
 Gly Val His Tyr Lys Glu Ala Tyr Glu Ser Ala Leu Asp Arg Gly Ala
 275 280 285
 Leu Ala Leu Asp Trp Gly Ser Ala Met Val Asp Asn Asn Arg Met Met
 290 295 300
 Lys Glu
 305

<210> 8011
 <211> 99

<212> PRT

<213> B.fragilis

<400> 8011

Pro Met Lys Ile Tyr Ile Ser Gly Gln Ile Thr Gly Leu Glu Glu Glu
 1 5 10 15
 Lys Ala Lys Arg Tyr Phe Asp Lys Ala Glu Glu Ile Leu Leu Glu Lys
 20 25 30
 Gly Tyr Gly Pro Val Asn Pro Met Ser Val Asn Pro Pro Met Glu Asn
 35 40 45
 Lys Ser Trp Lys Asp Tyr Met Ile Asp Asp Leu Lys Leu Leu Phe Asp
 50 55 60
 Cys Glu Ala Ile Tyr Leu Ile Asp Asn Trp Gln Ser Ser Lys Gly Ala
 65 70 75 80
 Arg Ile Glu Cys Tyr Ile Ala Lys Glu Leu Gly Met Arg Ile Leu Glu
 85 90 95
 Asn Ile Glu

<210> 8012

<211> 574

<212> PRT

<213> B.fragilis

<400> 8012

Ile Gly Lys Ile Gly Pro Gly Asn Val Lys Asn Lys Ser Ile Met Lys
 1 5 10 15
 Lys Ser Phe Leu Ile Ile Leu Cys Leu Ala Leu Leu Ser Cys Val Thr
 20 25 30
 Gly Cys Lys Asp Ser Thr Gln Thr Leu Leu Lys Lys Ser Val Glu Met
 35 40 45
 Glu Gly Ile Ser Thr Asp Ser Met Leu Phe Tyr Leu Gln Gln Ile Gln
 50 55 60
 Ser Pro Asn His Leu Asn Asp Lys Gln Arg Ala Glu Tyr Cys Phe Gln
 65 70 75 80
 Leu Tyr Lys Ala Thr Leu Trp Lys Thr Gln Lys Pro Lys Asp Ser Leu
 85 90 95
 Leu Lys Val Cys Ile Pro Leu Phe Leu His Val Gly Asp Thr Ala Gln
 100 105 110
 Trp Leu Gln Ala Gln Leu Glu Gln Ala Asn Ser Phe Phe Tyr Lys Asp
 115 120 125
 Gln Pro Asp Ser Ile Leu His Ser Ala Arg Glu Leu Arg Asp Lys Thr
 130 135 140
 Lys Tyr Met Thr Pro Thr Gln Gln Arg Tyr Tyr Tyr Asn Ile Gln Lys
 145 150 155 160
 Phe Thr Tyr Phe Asn Gln Lys Lys Tyr Pro Glu Ala Leu Lys Leu Ala
 165 170 175
 Asn Lys Val Leu Ala Leu Asn Asn Pro Ser Asn Asp Thr Leu Ser Leu
 180 185 190
 Phe Tyr Asp His Arg Thr Gln Leu Glu Ile Leu Arg Lys Met Gly Lys
 195 200 205
 Thr Asp Glu Val Ile Glu Gly Tyr Tyr Lys Met Leu Glu Trp Phe Ala
 210 215 220
 Pro Ser Lys Glu Tyr His Tyr Leu Thr Tyr Thr Ile Ala Glu Asp Ile
 225 230 235 240
 Val Asn Tyr Tyr Leu Gly Gln Gln Asp Phe Asp Lys Ala Leu Glu Ser
 245 250 255
 Val Gln Asn Leu Arg Leu Tyr Arg Arg Asn Arg Tyr Asp Ile Pro Tyr
 260 265 270

Tyr Gln Leu Ile Arg Gly Gln Ile Phe Gln Ser Leu His Gln Leu Asp
 275 280 285
 Ser Ala Gly Tyr Tyr Tyr Lys Gln Ala Ala Thr Ser Thr Ser Pro Tyr
 290 295 300
 Ile Ala Ile Glu Ala Thr Ser Arg Leu Tyr Gln Leu Thr Asn Ala Thr
 305 310 315 320
 Gln Gln Pro Glu Gln Ala Tyr Tyr Leu Ala Lys Thr Glu Asp Ile Leu
 325 330 335
 Tyr Lys Asp Leu Thr Ser Asn Leu Lys Ala Lys Glu Thr Thr Arg Lys
 340 345 350
 Tyr Asn Glu Val Lys Leu Gln Asn Glu Leu Tyr Gln Leu Arg Leu Thr
 355 360 365
 Gln Gln Glu Lys Glu Leu Trp Met Met Gly Ile Ala Val Ile Leu Leu
 370 375 380
 Leu Ile Ala Leu Leu Ile Leu Phe Phe Tyr His Gln Glu Lys Lys Lys
 385 390 395 400
 Arg Leu Val Ser Glu Arg Arg Leu Gln Ala Glu Gln Ala Gly Glu Glu
 405 410 415
 Ala Arg Arg Leu Gln His Glu Asn Glu Leu Leu His Lys Glu Ala Glu
 420 425 430
 Leu Ser Ala Leu Arg Glu Lys Glu Ile Ile Met Arg Asn Lys Glu Ser
 435 440 445
 Glu Met Arg Glu Ala Leu Phe Arg His Ile Ser Phe Phe Gln Lys Leu
 450 455 460
 Pro Ser Leu His Ile Glu Asn Ser Thr Asp Asp Asn Pro Asn Arg Lys
 465 470 475 480
 Lys Ile Thr Val Ser Asp Ala Glu Trp Cys Glu Val Lys Gln Ala Val
 485 490 495
 Asn Asp Ala Phe Asn Asn Phe Val Asp Arg Leu Gln Glu Asp Tyr Pro
 500 505 510
 Gln Leu Asn Glu Lys Asp Ile Cys Phe Cys Cys Leu Val Lys Ile Asn
 515 520 525
 Val Asn Ile Gln Asp Leu Ser Asp Ile Tyr Cys Val Ser Lys Ala Ala
 530 535 540
 Ile Thr Lys Arg Lys Tyr Arg Ile Lys Thr Glu Lys Met His Ile Ser
 545 550 555 560
 Asp Glu Thr Leu Ser Leu Asp Ala Ile Leu Gln Asn Phe Gly
 565 570

<210> 8013

<211> 320

<212> PRT

<213> B.fragilis

<400> 8013

Lys Lys Glu Met Lys Leu Glu Glu Lys Thr Lys Lys Lys Asp Glu Gln
 1 5 10 15
 Gly Leu Ile Ile Lys Lys Tyr Gln Gln Tyr Leu Lys Leu Glu Lys Ser
 20 25 30
 Leu Ser Lys Asn Thr Leu Glu Ala Tyr Leu Thr Asp Leu Glu Lys Leu
 35 40 45
 Leu Ser Phe Leu Ser Ala Glu Gly Val Glu Ile Leu Glu Val Ser Leu
 50 55 60
 Thr Asp Leu Gln Arg Phe Ala Ala Gly Leu His Asp Ile Gly Ile His
 65 70 75 80
 Ala Arg Ser Gln Ala Arg Ile Ile Ser Gly Ile Lys Ser Phe Phe His
 85 90 95
 Phe Leu Ile Ile Ala Asp Tyr Ile Glu Ala Asp Pro Ser Glu Leu Leu
 100 105 110

Glu Gly Pro Lys Ile Gly Phe Lys Leu Pro Glu Val Leu Thr Val Glu
 115 120 125
 Glu Ile Asp Arg Ile Ile Ser Thr Ile Asp Leu Ser Lys Asn Glu Gly
 130 135 140
 Gln Arg Asn Arg Ala Ile Leu Glu Thr Leu Tyr Ser Cys Gly Leu Arg
 145 150 155 160
 Val Ser Glu Leu Thr Gly Leu Lys Leu Ser Asp Leu Tyr Phe Asp Glu
 165 170 175
 Gly Phe Ile Lys Val Glu Gly Lys Gly Ser Lys Gln Arg Leu Val Pro
 180 185 190
 Ile Ser Pro Lys Ala Ile Gln Glu Ile Lys Leu Tyr Phe Leu Asp Arg
 195 200 205
 Asn Arg Ile Asn Ile Lys Lys Asp His Glu Asp Tyr Leu Phe Leu Ser
 210 215 220
 Arg Arg Gly Thr His Leu Ser Arg Ile Met Ile Phe His Leu Ile Lys
 225 230 235 240
 Glu Leu Ala Asp Met Ala Gly Ile Thr Lys Asn Ile Ser Pro His Thr
 245 250 255
 Phe Arg His Ser Phe Ala Thr His Leu Leu Glu Gly Gly Ala Asn Leu
 260 265 270
 Arg Ala Ile Gln Cys Met Leu Gly His Glu Ser Ile Ser Thr Thr Glu
 275 280 285
 Ile Tyr Thr His Ile Asp Arg Asn Met Leu Arg Ser Glu Ile Ile Glu
 290 295 300
 His His Pro Arg Asn Ile Lys Tyr Arg Gln Glu Lys Lys Pro Phe Arg
 305 310 315 320

<210> 8014
 <211> 417
 <212> PRT
 <213> B.fragilis

<400> 8014

Leu Glu Arg Ile Arg Gln Lys Val Ser Lys Phe Thr Ser Glu Asn Asn
 1 5 10 15
 Thr Val Met Lys Val Leu Tyr Thr Phe Gly Gly Met Pro His Tyr Leu
 20 25 30
 Asn Ala Met Leu Asn Lys Leu His Asn Lys Gly Val Glu Ile Thr Val
 35 40 45
 Ile Thr Pro Gln Lys Gly Asn Ala Thr Ile Gly Lys Gly Val Lys Met
 50 55 60
 Val Glu Gly Gly Thr Tyr Arg His Leu Thr Ala Ile Glu Lys Lys Ala
 65 70 75 80
 Phe Tyr Gly Lys Ser Ser Tyr Pro Ser Leu Pro Glu Ile Val Arg Glu
 85 90 95
 Glu Lys Pro Asp Ile Leu Ile Met Gly Trp Pro Tyr Phe Leu Gln Val
 100 105 110
 Phe Phe Gln Pro Arg Leu Arg Lys Ala Met Lys Glu Cys Arg Thr Arg
 115 120 125
 Leu Val Ile Arg Glu Ile Pro Phe Gln Thr Pro Pro Tyr Gly Lys Ile
 130 135 140
 Lys Glu Tyr Phe His Glu Asn Pro Met Tyr Asp Glu Asn Met Arg Leu
 145 150 155 160
 Val Ser Thr Gly Thr Gly Phe Tyr Leu Lys Gln Trp Leu Thr Ala Lys
 165 170 175
 Ile Arg Lys Tyr Cys Tyr Ala Arg Ile Thr Gly Thr Leu Asn Tyr Ser
 180 185 190
 Thr Ala Ala Tyr Asp Ile Leu Pro Ser Tyr Gly Val Lys Gln Glu Gln
 195 200 205

Ile His Val Thr Tyr Asn Ser Thr Asp Thr Asp Ala Leu Leu Lys Glu
 210 215 220
 Lys Glu Ala Val Leu Thr Ser Pro Pro Leu Leu Pro Pro Ser Ser Lys
 225 230 235 240
 Arg Ala Leu His Ile Gly Arg Leu Val Lys Trp Lys Arg Val Asp Leu
 245 250 255
 Leu Ile Asp Ala Phe Thr Lys Val Ile Ala Ser His Pro Asp Ala Glu
 260 265 270
 Leu Val Val Val Gly Asp Gly Pro Glu Leu Asp Asn Leu Lys Lys Gln
 275 280 285
 Ala Ala Asp Leu Asn Leu Thr Glu Gln Val Arg Phe Ile Gly Ala Val
 290 295 300
 Tyr Ser Pro Lys Glu Leu Gly Ala Tyr Met Asn Glu Ser Thr Val Tyr
 305 310 315 320
 Val Leu Ala Gly Met Gly Gly Leu Ser Ile Asn Asp Ala Met Thr Tyr
 325 330 335
 Gly Leu Pro Val Val Cys Ser Val Cys Asp Ser Thr Glu Arg Asp Leu
 340 345 350
 Val Thr Asp Gly Val Asn Gly Leu Phe Phe Lys Glu Gly Asn Ala Asp
 355 360 365
 Ser Leu Ser Asp Lys Leu Asn Lys Leu Phe Ala Ser Pro Glu Arg Cys
 370 375 380
 Ala Ser Met Gly Arg Glu Ser Glu Arg Ile Ile Arg Glu Lys Ile Asn
 385 390 395 400
 Ile Glu Thr Val Ser Glu Arg Tyr Leu Gln Ala Phe Arg Thr Phe Met
 405 410 415
 Gln

<210> 8015

<211> 174

<212> PRT

<213> B.fragilis

<400> 8015

Thr Lys Arg Ile Met Ala Lys Glu Ser Val Lys Ile Leu Gln Gly Lys
 1 5 10 15
 Leu Asp Val Lys Ser Leu Ile Asp Gln Leu Asn Ala Ala Leu Ser Glu
 20 25 30
 Glu Trp Leu Ala Tyr Tyr Gln Tyr Trp Val Gly Ala Leu Val Val Glu
 35 40 45
 Gly Ala Met Arg Ala Asp Val Gln Gly Glu Phe Glu Glu His Ala Glu
 50 55 60
 Glu Glu Arg His His Ala Gln Leu Ile Ala Asp Arg Ile Ile Glu Leu
 65 70 75 80
 Glu Gly Val Pro Val Leu Asp Pro Lys Lys Trp Phe Glu Leu Ala Arg
 85 90 95
 Cys Lys Tyr Asp Ser Pro Thr Ala Phe Asp Ser Val Ser Leu Leu Asn
 100 105 110
 Gln Asn Val Ser Ser Glu Arg Cys Ala Ile Leu Arg Tyr Gln Glu Ile
 115 120 125
 Ala Asn Phe Thr Asn Gly Lys Asp Tyr Thr Thr Cys Asp Ile Ala Lys
 130 135 140
 His Ile Leu Ala Glu Glu Glu His Glu Gln Asp Leu Gln Asp Tyr
 145 150 155 160
 Leu Thr Asp Ile Ala Arg Met Lys Glu Ser Phe Leu Lys Lys
 165 170

<210> 8016

<211> 203
 <212> PRT
 <213> B.fragilis

<400> 8016

Ile	Ile	Thr	Phe	Tyr	Arg	Glu	Asn	Thr	Phe	Asn	Ile	Met	Asp	Thr	Ser
1				5					10					15	
Lys	Ile	Val	Gly	Glu	Lys	Ile	Lys	Ser	Leu	Arg	Glu	Asn	Lys	Gly	Ile
		20						25					30		
Ser	Ile	Glu	Glu	Leu	Ala	Glu	Arg	Ser	Gly	Leu	Ala	Ile	Glu	Gln	Ile
		35					40					45			
Glu	Arg	Ile	Glu	Asn	Asn	Ile	Asp	Leu	Pro	Ser	Leu	Ala	Pro	Leu	Ile
		50				55					60				
Lys	Ile	Ala	Arg	Val	Leu	Gly	Val	Arg	Leu	Gly	Thr	Phe	Leu	Asp	Asp
65					70					75				80	
Gln	Asp	Glu	Thr	Gly	Pro	Val	Val	Ser	Arg	Lys	Met	Glu	Ala	Thr	Asp
				85					90					95	
Thr	Ile	Ser	Phe	Ser	Asn	Asn	Ala	Ile	His	Ser	Arg	Lys	His	Met	Gln
			100					105					110		
Tyr	His	Ser	Leu	Ser	Lys	Ser	Lys	Ala	Asp	Arg	His	Met	Glu	Pro	Phe
		115					120					125			
Ile	Ile	Asp	Val	Ala	Pro	Thr	Gln	Asp	Ser	Asp	Phe	Val	Leu	Ser	Ser
	130						135				140				
His	Glu	Gly	Glu	Glu	Phe	Ile	Met	Val	Met	Glu	Gly	Val	Met	Glu	Ile
145					150					155				160	
Ser	Tyr	Gly	Lys	Ser	Thr	Tyr	Leu	Leu	Glu	Glu	Gly	Asp	Ser	Ile	Tyr
				165					170					175	
Tyr	Asp	Ser	Ile	Val	Pro	His	His	Val	His	Ala	Tyr	Glu	Gly	Gln	Ala
			180					185						190	
Ala	Lys	Ile	Leu	Ala	Val	Ile	Tyr	Thr	Pro	Ile					
		195					200								

<210> 8017
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 8017

Cys	Phe	Leu	Met	Asn	Tyr	Ala	Ser	Ile	Leu	Val	Lys	Lys	Leu	Thr	Leu
1				5					10					15	
Ser	Arg	Met	Ser	Gln	Asn	Leu	Tyr	Val	Arg	Leu	Gly	Phe	Leu	Gly	Asn
			20					25					30		
Gln	Pro	Phe	Phe	Thr	Leu	Ser	Ser	Cys	Ser	Lys	Thr	Ser	Leu	Met	Val
		35					40					45			
Gln	Lys	Glu	Glu	Lys	Ala	Asn	Thr	Pro	Asn	Lys	Asp	Glu	Thr	Ser	Ile
	50					55					60				
Leu	Ser	Val	Leu	Asn	Glu	Ala	Ala	Thr	Pro	Ala	Ile	Pro	Asn	Ile	Arg
65					70					75				80	
Lys	Ile	His	Gln	His	Phe	Val	Pro	Gln							
				85											

<210> 8018
 <211> 338
 <212> PRT
 <213> B.fragilis

<400> 8018

Lys	Pro	Met	Ile	Val	Met	Asn	Asn	Phe	Leu	Val	Phe	Asp	Thr	Ile	Lys
1				5					10					15	

Ile Val Thr Cys Gly Thr Tyr Leu Lys Ile Ser Asp Lys Ser Val Phe
 20 25 30
 Thr Thr Asp Val Asp Leu Leu Asp Gly Arg Thr Ile Lys Ser Val Thr
 35 40 45
 Phe Asn Ser Gln Arg Asn Arg Ser Ile Val Pro Phe Glu Leu Tyr Ile
 50 55 60
 His Ala Asn Leu Leu Ser Asn Lys Met Cys Ile Glu Phe Ser Ser Lys
 65 70 75 80
 Ile Leu Trp Glu Asp Tyr Pro Lys Leu Ile Ser Ser Glu Thr Phe Ala
 85 90 95
 Gln Cys Leu Arg Asn Ile Glu Lys Thr Gly Ile Cys Thr Leu Asp Ile
 100 105 110
 Asp Arg Ile Met Glu Asp Cys Tyr Val Thr Lys Leu His Val Thr Lys
 115 120 125
 Asp Ile Glu Leu Glu Leu Thr Pro Ala Ile Leu Asn Cys Leu Asn Leu
 130 135 140
 Cys Thr Gly Asn Phe Arg Arg Tyr Asn Trp Glu Arg Tyr Lys Thr Ala
 145 150 155 160
 Ile Leu Phe Ser Lys Asn Val Lys Ser Ser Asn Ser Lys Glu Ala Ile
 165 170 175
 Ser Ile Tyr Asp Lys Gly Ile Glu Ile Val Gln Thr Lys Asn Lys Gly
 180 185 190
 Phe Leu Gly Leu Val Glu Asn Ala Asp Lys Ile Val Glu Tyr Phe Ala
 195 200 205
 Gly Lys Thr Arg Phe Glu Val Lys Tyr Glu Asn Met Ser Lys Ile Lys
 210 215 220
 Lys Glu Leu Gly Ile Lys Asp Thr Ser Leu Lys Ser Val Phe Gly Val
 225 230 235 240
 Lys Lys Asn Ile Val Leu Thr Gln Phe Asp Lys Ile Phe Thr Glu Arg
 245 250 255
 Thr Ile Ser Thr Asp Val Arg Ile Glu Thr Phe Ser Glu Tyr Gly Ile
 260 265 270
 Trp Asn Ile Val Cys Asn His Asn Gly Asp Leu Lys Ala Ile Glu Gln
 275 280 285
 Glu Ile Lys Asp Leu Gly Ile Tyr Ala Lys Gly Ser Arg Ala Val Leu
 290 295 300
 Gly Arg Thr Met Lys Lys Ile Lys Glu Ile Ala Gln Ile Trp Gly Asn
 305 310 315 320
 Arg Glu Met Lys Thr Asp Val Val Leu Glu Lys Ile Arg Leu Leu Leu
 325 330 335
 Arg Gly

<210> 8019

<211> 560

<212> PRT

<213> B.fragilis

<400> 8019

Ser Ala Met Ile Ala Leu His Ile Thr Lys Asn Met Gln Leu Tyr Glu
 1 5 10 15
 Arg Thr Leu Gly Gln Trp Leu Glu His Trp Ala Glu Thr Thr Pro Asp
 20 25 30
 Lys Glu Tyr Ile Val Tyr Ser Asp Arg Asn Leu Arg Phe Thr Trp Lys
 35 40 45
 Gln Phe Asn Lys Arg Val Asp Asp Met Ala Lys Gly Leu Ile Ala Ile
 50 55 60
 Gly Val Glu Arg Gly Thr His Val Gly Ile Trp Ala Ala Asn Val Pro
 65 70 75 80

Asp Trp Leu Thr Leu Leu Tyr Ala Cys Ala Lys Ile Gly Ala Val Tyr
 85 90 95
 Val Thr Val Asn Thr Asn Tyr Lys Gln Ala Glu Leu Glu Tyr Leu Cys
 100 105 110
 Glu Asn Ser Asp Met His Thr Leu Cys Ile Val Asn Gly Glu Lys Asp
 115 120 125
 Ser Asp Phe Val Gln Met Thr Tyr Thr Met Leu Pro Glu Leu Lys Thr
 130 135 140
 Cys Glu Arg Gly His Leu Lys Ser Glu Arg Phe Pro Tyr Met Lys Asn
 145 150 155 160
 Val Ile Tyr Val Gly Gln Glu Lys His Arg Gly Met Tyr Asn Thr Gln
 165 170 175
 Glu Ile Leu Leu Leu Gly Asp Asn Ile Glu Asp Thr Glu Leu Asn Glu
 180 185 190
 Leu Lys Ser Gln Val Asp Cys His Asp Val Val Asn Met Gln Tyr Thr
 195 200 205
 Ser Gly Thr Thr Gly Phe Pro Lys Gly Val Met Leu Thr His Tyr Asn
 210 215 220
 Ile Ser Asn Asn Gly Phe Leu Thr Gly Glu His Met Lys Phe Thr Gly
 225 230 235 240
 Asn Asp Lys Leu Cys Cys Cys Val Pro Leu Phe His Cys Phe Gly Val
 245 250 255
 Val Leu Ala Thr Met Asn Cys Leu Thr His Gly Cys Thr Gln Val Met
 260 265 270
 Val Glu Arg Phe Asp Pro Leu Ile Val Leu Ala Ser Ile His Lys Glu
 275 280 285
 Lys Cys Thr Ala Leu Tyr Gly Val Pro Thr Met Phe Ile Ala Glu Leu
 290 295 300
 Asn His Pro Met Phe Asp Met Phe Asp Met Ser Ser Leu Arg Thr Gly
 305 310 315 320
 Ile Met Ala Gly Ser Leu Cys Pro Val Glu Leu Met Lys Gln Val Glu
 325 330 335
 Glu Lys Met Tyr Met Lys Val Thr Ser Val Tyr Gly Leu Thr Glu Ala
 340 345 350
 Ala Pro Gly Met Thr Ala Thr Arg Ile Asp Asp Pro Phe Asp Val Arg
 355 360 365
 Cys Asn Thr Val Gly Arg Asp Phe Glu Phe Thr Glu Val Lys Val Leu
 370 375 380
 Asn Pro Glu Thr Gly Glu Glu Cys Pro Val Gly Val Gln Gly Glu Met
 385 390 395 400
 Cys Asn Arg Gly Tyr Asn Thr Met Lys Gly Tyr Tyr Lys Asn Pro Gln
 405 410 415
 Ala Thr Ala Glu Val Ile Asp Lys Asn Asn Phe Leu His Ser Gly Asp
 420 425 430
 Leu Gly Ile Lys Asp Glu Asp Gly Asn Tyr Arg Ile Thr Gly Arg Ile
 435 440 445
 Lys Asp Met Ile Ile Arg Gly Gly Glu Asn Ile Tyr Pro Arg Glu Ile
 450 455 460
 Glu Glu Phe Leu Tyr Lys Leu Asp Gly Val Lys Asp Val Gln Val Ser
 465 470 475 480
 Gly Ile Pro Ser Lys Lys Tyr Gly Glu Ala Val Gly Ala Phe Ile Ile
 485 490 495
 Leu His Glu Gly Val Thr Met Gln Ala Ser Asp Val Gln Asp Phe Cys
 500 505 510
 Arg Asn Lys Ile Ser Arg Tyr Lys Ile Pro Lys Tyr Ile Phe Phe Ile
 515 520 525
 Asp Glu Phe Pro Met Thr Gly Ser Gly Lys Ile Gln Lys Phe Lys Leu
 530 535 540
 Lys Asp Leu Gly Leu Lys Leu Cys Glu Glu Gln Gly Ile Gln Ile Ile

545

550

555

560

<210> 8020
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 8020
 Lys Gln Lys Ile Ser Pro Asp Ile Val Ile Ser Ser Lys Ser Ser Ala
 1 5 10 15
 Cys Val Ser Asn His Leu Leu Arg Thr Lys Phe Lys Ser Arg Phe Leu
 20 25 30
 Ser Met Glu Glu Thr Ala Phe Ile Phe Tyr Leu Ser Pro Leu Leu Gly
 35 40 45
 Tyr Lys Ile Ser Leu Ile Leu Gln Gln Asn Glu Leu Asn Tyr Asn Leu
 50 55 60
 Leu Pro Gly Lys Tyr Ile Gln His Tyr Gly Tyr Lys Gln Asn Arg Arg
 65 70 75 80
 Arg Lys Asn

<210> 8021
 <211> 348
 <212> PRT
 <213> B.fragilis

<400> 8021
 Asp Met Lys Ile Ser Val Leu Leu Ala Ala Leu Leu Leu Leu Phe Ser
 1 5 10 15
 Cys Thr Asp Lys Asp Ser Lys Gln Ser Gln Asp Leu Ile Val Lys Thr
 20 25 30
 Ala Gln Ala Val Ser Ala Ser Gly Ile Lys Thr Thr Glu Phe Pro Phe
 35 40 45
 Ile Ala Gln Pro Phe Arg Thr Ser Glu Leu Ser Phe Arg Val Gly Gly
 50 55 60
 Pro Ile Asp Arg Leu Asp Val Tyr Ala Gly Asn His Tyr Lys Gln Gly
 65 70 75 80
 Ser Ile Ile Ala Glu Ile Asp Pro Arg Asp Phe His Ile Arg Lys Glu
 85 90 95
 Arg Ala Glu Ala Ile Tyr His Gln Ala Lys Ala Glu Phe Glu Arg Ile
 100 105 110
 Glu Lys Leu Tyr Glu Lys Asn Asn Val Ser Ala Ser Thr Tyr Glu Lys
 115 120 125
 Thr Lys Ala Asp Tyr Thr Thr Ala Lys Thr Ala Phe Asp Thr Ala Ser
 130 135 140
 Asn Glu Leu Gly Asp Thr Arg Leu Thr Ala Pro Phe Asp Gly Tyr Val
 145 150 155 160
 Gly Glu Val Tyr Ile Glu Lys Tyr Gln Asp Val Lys Pro Ala Gln Pro
 165 170 175
 Val Ile Ser Phe Ile Asp Ile Asn Arg Leu Lys Ile Glu Ile Tyr Val
 180 185 190
 Thr Gln Asn Ile Ala Phe Ala Ser His Pro Thr Asp Ser Val Arg Ile
 195 200 205
 Tyr Phe Asp Ala Gln Pro Asp Lys Tyr Tyr Lys Ala Gln Ile Val Glu
 210 215 220
 Val Ser Lys Gly Thr Thr Arg Asn Asn Leu Ser Tyr Leu Leu Thr Ala
 225 230 235 240
 Val Leu Pro Asn Lys Glu Gly Lys Leu Leu Ala Gly Met Ser Gly Lys
 245 250 255

Ala Ile Phe Asp Ala Pro Gly Thr Thr Asp Leu Thr Gly Val Ser Ile
 260 265 270
 Pro Gln Thr Ala Leu Cys Tyr Arg Pro Ser Glu Gly Glu Tyr Val Trp
 275 280 285
 Val Ile Asp Thr Asn Thr Arg Gln Val Asn Arg Arg Thr Val Lys Lys
 290 295 300
 Gly Asn Leu Leu Pro Gly Gly Tyr Val Thr Ile Thr Glu Gly Leu Arg
 305 310 315 320
 Ala Ser Glu Thr Val Ala Thr Ser Gly Leu Arg Phe Leu Ser Asp Gly
 325 330 335
 Met Lys Val Glu Ile Ser Thr Lys Thr Asn Ser Leu
 340 345

<210> 8022
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8022

Pro Tyr Arg Met Val Pro Ala Asp Ser Arg Arg Ile Pro Arg Ala Pro
 1 5 10 15
 Arg Tyr Ser Gly Tyr His Tyr Ala Ser Val Thr Leu Glu Tyr Arg Ala
 20 25 30
 Ile Thr Val Tyr Gly Thr Thr Phe Gln Ser Phe Leu Leu Asn Asn Cys
 35 40 45
 Leu Ala Arg Ala Trp Ser Tyr Asn Pro Thr His Ala Val Thr Trp Val
 50 55 60
 Val Trp Ala Asn Pro Arg Ser Leu Ala Thr Thr Arg Gly Ile Ile Ile
 65 70 75 80
 Tyr Phe Leu Phe Leu Gln Val Leu Arg Cys Phe Ser Ser Leu Arg
 85 90 95

<210> 8023
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 8023

Asp Lys Asn Leu Gln Gly Phe Phe Phe Leu Gly Ala Gln Ala Gly Ala
 1 5 10 15
 His Ser Asp Ile Leu Ala Leu Leu Pro His Ile Gln His Phe Ile Tyr
 20 25 30
 Arg Phe Cys Tyr Tyr Phe Cys Arg Arg Asn Lys Leu Tyr Gln Tyr Ala
 35 40 45
 Pro Thr Gln Met Tyr Ile Ser Cys Val Leu Gly Ser Asp Gly Ala Thr
 50 55 60
 Thr Thr Gln Gln Arg Glu Gly Ala Ile Ala Leu Leu Tyr Ser Thr Pro
 65 70 75 80
 Thr Leu Ile Glu Gln Gln Ala Cys His Lys Ile Ala Ile Phe Phe Thr
 85 90 95

<210> 8024
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 8024

Gln Asp Cys Val Met Arg Ile Gln Ile Ile Asn Gly Pro Asn Ile Asn
 1 5 10 15

[illegible]

<400> 8025

<210> 8026

<211> 587

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (498)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8026

Gln	Ile	Phe	Phe	Ile	Ser	Met	Arg	Leu	His	Val	Leu	Ser	Leu	Thr	Cys
1				5					10					15	
Leu	Leu	Leu	Thr	Val	Gly	Gly	Thr	Gly	Pro	Val	Ala	Ala	Gln	Lys	Pro
			20					25					30		
Gln	Asn	Tyr	Pro	Tyr	Gly	Val	Pro	Ser	Glu	Pro	Trp	Glu	Glu	Ser	Phe
		35					40					45			
Gly	Asn	His	Arg	Ala	Val	Leu	Gln	Ile	Glu	Lys	Pro	Ala	Gln	Ile	Ala
	50					55					60				

Asn	Leu	Asp	Phe	Gln	Trp	Arg	Arg	Pro	Asp	Lys	Asp	Ala	Gly	His	Arg
65					70					75					80
Arg	Phe	Leu	Ile	Ile	His	Ala	Ala	Thr	Gly	Asp	Thr	Ile	Arg	Asn	Ile
			85							90				95	
Arg	Arg	Ile	Glu	Val	Asn	Asp	Glu	His	Cys	Arg	Leu	Gln	Phe	Gly	Pro
			100					105					110		
Val	Glu	Gln	Lys	Gly	Thr	Tyr	Tyr	Phe	Tyr	Tyr	Leu	Pro	Tyr	Gln	Val
		115					120					125			
Gln	Lys	Gly	Tyr	Gly	Phe	Tyr	Ser	Gly	Gly	Tyr	Leu	Pro	Lys	Glu	Asn
	130					135					140				
Glu	Pro	Asp	Ala	Ala	Trp	Gln	Ala	Gln	Gly	Gly	Ser	Thr	Leu	Lys	Ser
145					150					155					160
Thr	Arg	Ala	Lys	Val	Val	Arg	Val	Glu	Ser	Arg	Gln	Ala	Phe	Asp	Ser
			165						170					175	
Phe	Tyr	Pro	Met	Glu	Val	Ala	Ala	Thr	Ala	Arg	Glu	Lys	Glu	Asn	Tyr
		180						185					190		
Ile	Asn	Arg	His	Lys	Ala	Ser	Leu	Tyr	Leu	Phe	Ala	Glu	Asp	Arg	Arg
	195						200					205			
Phe	Pro	Ile	Arg	Met	Arg	Ser	Asn	Leu	Pro	Thr	Lys	Trp	Leu	Ala	Asp
	210					215					220				
Lys	Gln	Gly	Lys	Leu	Phe	Arg	Gly	Glu	Ala	Ala	Pro	Asn	Glu	Tyr	Tyr
225					230					235					240
Thr	Phe	Gln	Ile	Gly	Leu	Trp	Ala	Ala	Val	Asn	Gln	Ala	Asp	Lys	Ile
			245						250					255	
Ala	Tyr	Arg	Ala	Ser	Ser	Leu	Lys	Cys	Gly	Arg	Glu	Ile	Ile	Pro	Ala
			260					265						270	
Thr	Ala	Ile	Thr	Cys	Phe	Asn	Val	Glu	Gly	Thr	Asp	Pro	Tyr	Gly	Lys
		275					280					285			
Ala	Phe	Lys	Lys	Glu	Val	Asn	Val	Pro	Lys	Gly	Glu	Val	Gln	Ala	Leu
	290					295					300				
Trp	Phe	Gly	Ile	Asp	Ile	Pro	Asp	Gly	Gln	Lys	Glu	Gly	Ile	Tyr	Thr
305					310					315					320
Gly	Thr	Ile	Thr	Leu	Ser	Asp	Ala	Asp	Gly	Ala	Gln	Ser	Ser	Ile	Pro
			325						330					335	
Leu	Ser	Ile	Arg	Ile	Ala	Gly	Lys	Ala	Leu	Pro	Asp	Arg	Gly	Asp	Ser
		340						345					350		
Glu	Leu	Trp	Arg	Cys	Ser	Arg	Leu	Arg	Trp	Leu	Asn	Ser	Thr	Leu	Gly
		355					360					365			
Ile	Ala	Asp	Thr	Pro	Thr	Ala	Pro	Tyr	Thr	Ala	Met	Thr	Val	Asn	Glu
	370					375					380				
Asn	Arg	Ile	Gly	Cys	Leu	Gly	Arg	Ser	Ile	Thr	Ile	Asp	Glu	Gly	Thr
385					390					395					400
Gly	Leu	Pro	Ala	Gln	Ile	Arg	Ser	Trp	Asn	Asn	Asp	Val	Leu	Ser	Ser
			405						410					415	
Pro	Ile	Glu	Phe	Val	Ile	Gln	Thr	Ala	Gly	Gly	Val	Lys	Ser	Leu	Lys
		420						425					430		
Ala	Val	Pro	Glu	Leu	Thr	Glu	Arg	Thr	Glu	Gly	His	Val	Ala	Gly	Asn
		435					440					445			
Trp	Lys	Ala	Glu	Asp	Glu	Asp	Met	Thr	Val	Ser	Cys	Lys	Ala	Ile	Met
	450					455					460				
Glu	Phe	Asp	Gly	Trp	Ile	Asn	Tyr	Ile	Tyr	Thr	Ile	Thr	Pro	Lys	Lys
465					470					475					480
Gln	Ile	Gln	Val	Lys	Asp	Val	Arg	Leu	Val	Leu	Pro	Val	Arg	Asn	Glu
			485						490					495	
Ile	Xaa	Thr	Tyr	Phe	Leu	Gly	Met	Gly	Leu	Pro	Gly	Gln	Pro	Thr	Pro
		500						505					510		
Gln	Gln	Tyr	Asp	Arg	Lys	Trp	Asp	Ala	Pro	Glu	Lys	Thr	Val	Asn	Thr
		515					520					525			
Phe	Gly	Val	Ser	Ile	Pro	Asn	Phe	Gln	Arg	Thr	Thr	Met	Gly	Cys	Gly

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530 535 540
 Pro Ser Thr Ile Phe Trp Ile Gly Asn Gln His Ala Gly Ile His Trp
 545 550 555 560
 Gln Ile Arg Gly Ser Thr Tyr Ser Arg Ser Ala Ile Glu Ser Ala Pro
 565 570 575
 Ser Gly Leu Ser Gly Lys Leu Val Gln Arg Gly
 580 585

<210> 8027
 <211> 458
 <212> PRT
 <213> B.fragilis

<400> 8027

Ile Thr Lys Val Arg Val Tyr Ser Gly Leu Tyr Glu Arg Arg Pro Asp
 1 5 10 15
 Thr Pro Phe Ile Phe Thr Asn Gly Gln Glu Arg Lys Tyr Asn Met Ala
 20 25 30
 Glu Gln Ser Leu Lys Glu Lys Thr Ala Lys Gly Leu Phe Trp Gly Gly
 35 40 45
 Phe Ser Asn Gly Ile Gln Gln Leu Leu Asn Leu Leu Phe Gly Ile Ile
 50 55 60
 Ile Thr Arg Met Leu Asp Ser Thr Asp Tyr Gly Met Ile Gly Met Leu
 65 70 75 80
 Ala Ile Phe Thr Ala Val Ala Asn Ser Ile Gln Glu Ser Gly Phe Thr
 85 90 95
 Ala Ala Leu Ala Asn Lys Gln Thr Phe Arg His Glu Asp Tyr Asn Ala
 100 105 110
 Val Phe Trp Phe Ser Phe Leu Met Gly Ala Ser Leu Tyr Leu Leu Leu
 115 120 125
 Phe Phe Cys Ala Pro Phe Ile Ala Ala Phe Tyr Lys Thr Pro Gln Leu
 130 135 140
 Ile Pro Leu Ser Arg Phe Leu Phe Leu Gly Phe Leu Ile Ser Ser Cys
 145 150 155 160
 Gly Thr Ala His Asn Ala Val Leu Phe Lys Lys Leu Met Val Lys Glu
 165 170 175
 Lys Ala Lys Ala Thr Ile Thr Ala Leu Leu Cys Ser Gly Thr Ile Gly
 180 185 190
 Ile Val Met Ala Tyr Asn Gly Met Ala Phe Trp Gly Leu Ala Val Gln
 195 200 205
 Gln Ile Thr Tyr Ile Phe Ile Ala Asn Ala Leu Leu Trp Tyr Phe Ser
 210 215 220
 Pro Trp Arg Pro Thr Phe Ser Phe Asn Phe Lys Pro Ile Arg Glu Met
 225 230 235 240
 Leu Pro Phe Ser Ser Lys Leu Leu Ile Thr Asn Val Phe His Tyr Ile
 245 250 255
 Asn Asp Asn Ile Phe Ser Val Leu Leu Gly Arg Phe Tyr Thr Ser Gln
 260 265 270
 Asp Val Gly Tyr Tyr Thr Gln Ala Asn Lys Trp Thr Asn Met Gly Phe
 275 280 285
 Ser Leu Ile Ser Asn Met Ile Asn Gly Val Ser Gln Pro Val Leu Val
 290 295 300
 Glu Thr Ser Ser Asp Ala Met Arg Gln Lys Asn Ile Phe Arg Lys Met
 305 310 315 320
 Leu Arg Phe Thr Ala Phe Ile Ser Phe Pro Ala Met Phe Gly Leu Ala
 325 330 335
 Leu Ile Ala Asn Glu Phe Ile Val Ile Ala Val Thr Ala Lys Trp Gln
 340 345 350
 Ala Cys Val Pro Ile Met Gln Ile Leu Cys Ile Trp Gly Ala Phe Val

355 360 365
 Pro Ile Thr Tyr Met Tyr Ser Asn Leu Leu Ile Ser Lys Gly Lys Ser
 370 375 380
 Asn Leu Phe Met Trp Asn Thr Ile Ala Gln Ser Leu Val Gln Leu Thr
 385 390 395 400
 Met Leu Leu Cys Thr Ile Ser Gln Gly Ile Leu Val Met Ala Val Ile
 405 410 415
 Tyr Thr Val Ile Asn Ile Gly Trp Leu Leu Ile Trp His Tyr Phe Val
 420 425 430
 Asn Lys Gln Ile His Ile Thr Leu Trp Glu Val Met Lys Asp Ile Thr
 435 440 445
 Pro Tyr Leu Leu Ile Ser Gly Gly Val Ile
 450 455

<210> 8028
 <211> 439
 <212> PRT
 <213> B.fragilis

<400> 8028

Leu Cys Thr Val Ser His Arg Lys Pro Leu Phe Leu Pro Lys His Phe
 1 5 10 15
 Asp Arg Met Arg Val Leu Ile Ile Asn Thr Ser Glu Arg Leu Gly Gly
 20 25 30
 Ala Ala Val Ala Ala Ser Arg Leu Met Glu Ser Leu Lys Asn Asn Gly
 35 40 45
 Ile Lys Ala Lys Met Leu Val Arg Asp Lys Gln Thr Asp Gln Ile Ser
 50 55 60
 Val Val Gly Leu Gln Arg Asn Trp Trp Gln Val Trp Arg Phe Val Trp
 65 70 75 80
 Glu Arg Ile Val Ile Trp Lys Ala Asn Arg Phe Lys Lys Asn Asn Leu
 85 90 95
 Phe Ala Val Asp Ile Ala Asn Thr Gly Thr Asp Ile Thr Ser Leu Pro
 100 105 110
 Glu Phe Gln Gln Ala Asp Val Ile His Leu His Trp Val Asn Gln Gly
 115 120 125
 Met Leu Ser Leu Asn Asp Ile Arg Lys Ile Leu Lys Ser Gly Lys Pro
 130 135 140
 Val Val Trp Thr Met His Asp Met Trp Pro Cys Thr Gly Ile Cys His
 145 150 155 160
 His Ala Arg Glu Cys Thr Asn Tyr His Gln Glu Cys Asn His Cys Pro
 165 170 175
 Tyr Leu Tyr Gly Gly Gly Ser Lys Lys Asp Leu Ser Asn Arg Ile Phe
 180 185 190
 Arg Lys Lys Gln Gln Leu Tyr Lys Glu Ala Pro Ile Thr Phe Ile Thr
 195 200 205
 Cys Ser Gln Trp Leu Lys Gly Gln Ala Glu Lys Ser Ala Leu Leu Thr
 210 215 220
 Gly Glu Thr Val Ile Ser Ile Pro Asn Pro Ile Asn Thr Asn Leu Phe
 225 230 235 240
 Lys Pro Arg Asn Lys Lys Glu Ala Arg Ser Lys Cys His Leu Pro Gln
 245 250 255
 Asn Gly Lys Leu Ile Leu Phe Gly Ser Ala Lys Ile Thr Asp Lys Arg
 260 265 270
 Lys Gly Ile Asp Tyr Leu Ile Glu Ser Cys Lys Leu Leu Ala Ala Lys
 275 280 285
 His Pro Glu Leu Lys Asp Ser Leu Ser Val Val Val Phe Gly Lys Gln
 290 295 300
 Ser Glu Gln Leu Lys Pro Leu Leu Pro Phe Lys Val Tyr Pro Leu Asn

305 310 315 320
 Tyr Val Ser Asn Glu His Glu Leu Val Asp Val Tyr Asn Ala Val Asp
 325 330 335
 Leu Phe Val Thr Pro Ser Leu Glu Glu Asn Leu Pro Asn Thr Ile Met
 340 345 350
 Glu Ala Met Ala Cys Gly Val Pro Cys Ile Gly Phe Asn Val Gly Gly
 355 360 365
 Ile Pro Glu Met Ile Asp His Leu His Asn Gly Tyr Val Ala Gln Tyr
 370 375 380
 Lys Ser Ser Glu Asp Phe Ala Asn Gly Ile Tyr Trp Ala Leu Thr Asp
 385 390 395 400
 Pro Asp Tyr Pro Ser Leu Ser Glu Gln Ala Asn Arg Lys Val Ile Ala
 405 410 415
 Asn Tyr Ser Glu Gly Ile Ile Ala Lys Arg Tyr Ile Asp Val Tyr Asn
 420 425 430
 Lys Ile Thr Gly Arg Tyr Ala
 435

<210> 8029
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 8029
 Gln Pro Leu Phe Ile Arg Asp Glu Met Lys Glu Thr Asp Leu Leu Asp
 1 5 10 15
 Glu Tyr Ile Leu Gln His Ile Asp Glu Glu Gly Glu Tyr Leu Lys Ser
 20 25 30
 Leu Tyr Arg Asp Thr His Val Lys Leu Leu Arg Pro Arg Met Ala Ser
 35 40 45
 Gly His Leu Gln Gly Arg Met Leu Lys Met Phe Val Arg Met Ile Arg
 50 55 60
 Pro Arg Gln Ile Leu Glu Ile Gly Thr Tyr Ser Gly Tyr Ser Ala Leu
 65 70 75 80
 Cys Leu Ala Glu Gly Leu Glu Glu Gly Gly Met Leu His Thr Phe Glu
 85 90 95
 Ile Asn Asp Glu Gln Glu Asp Phe Thr Arg Pro Trp Leu Glu Asn Ser
 100 105 110
 Ala Tyr Ala Asp Lys Ile Lys Phe Tyr Ile Gly Asp Ala Leu Arg Leu
 115 120 125
 Ile Pro Ala Leu Gly Ile Thr Phe Asp Leu Ala Phe Val Asp Gly Asp
 130 135 140
 Lys Arg Lys Tyr Ile Glu Tyr Tyr Glu Met Thr Leu Ala His Leu Ser
 145 150 155 160
 Val Gly Gly Tyr Ile Ile Ala Asp Asn Thr Leu Trp Asp Gly His Val
 165 170 175
 Leu Glu Glu Pro His Ser Asn Asp His Gln Thr Ile Gly Ile Lys Ala
 180 185 190
 Phe Asn Glu Leu Val Ala His Asp Glu Arg Val Glu Lys Val Ile Leu
 195 200 205
 Pro Leu Arg Asp Gly Leu Thr Ile Ile Arg Lys Lys
 210 215 220

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 <212> PRT
 <213> B.fragilis

<400> 8030

Gln Val Leu Leu Asp Ile Pro Val Ser Tyr Leu Phe Ile Ile Lys Ser
 1 5 10 15
 Asp Arg Phe Met Trp Trp Asn Tyr Met Lys Val Leu Met Phe Asn Thr
 20 25 30
 Leu Asn Pro Asn Asn Leu Phe Arg Gln Arg Pro Ser Gly Phe Asn Leu
 35 40 45
 Pro Met Ile Ile Leu Tyr Ile Lys Leu Asp Ser Gln Asn Ala Lys Ile
 50 55 60
 Asp Gln Lys Thr Leu Ile Gly His Leu Pro Ser Phe His Tyr Asp Phe
 65 70 75 80
 Trp Arg Leu

<210> 8031
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 8031
 Cys Gln Val Phe Ile Asn Pro Met Gln Phe Gly Pro Ile Asn Asp Ala
 1 5 10 15
 Pro Tyr Leu Leu Thr Val Ser Arg Met Arg Ser Ser Asn Lys Ala Pro
 20 25 30
 Ser Cys Val Ser Ser Pro Asn Pro Ala Glu Arg Ile Met Lys Ala Arg
 35 40 45
 Val Cys Phe Ser Ala Ala Ser Val Ser Thr Thr Ser Gly Gln Arg Thr
 50 55 60
 Ala Gly Ile Ala Arg Ile Ala Arg Ser Val Ser Gly Asn Ser Phe Ala
 65 70 75 80
 Ser Ala Lys Glu Gly Thr Pro Cys Thr Ser Val Ser Leu Gly Leu Thr
 85 90 95
 Ala Arg Ser Ser Pro
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 <211> 329
 <212> PRT
 <213> B.fragilis

<400> 8032
 Leu Gly Phe Leu Glu Arg Asn Ile Lys Asn Met Lys Ile Ser Asn Lys
 1 5 10 15
 Tyr Asp Arg Leu Val Arg Lys Leu Ile Ala Gly Glu Ser Ser Ser Glu
 20 25 30
 Glu Met Glu Glu Leu Ala His Trp Asn Val Val Glu Thr Lys Met Lys
 35 40 45
 Lys Gln Phe Asp Ala Ala Lys Asn Ile Val Glu Asn Gly Ala Ile Glu
 50 55 60
 Arg Arg Ile Trp Asp Lys Ile Asp Ser Arg Cys Gln Ala Pro Val Glu
 65 70 75 80
 Arg Ser Gln Lys Leu Gln Leu Arg Tyr Trp Arg Val Ala Leu Ala Ala
 85 90 95
 Cys Ile Thr Ala Leu Leu Ile Ile Gly Gly Gly Ile Phe Phe Asp
 100 105 110
 Lys Gly His Thr Ala Ser Gln Arg Ile Thr Glu Tyr Thr Glu Val Val
 115 120 125
 Ser Ser Asn Ser Arg Leu Tyr Ile Leu Pro Asp Ser Ser Lys Val Trp
 130 135 140
 Ile Gln Ala Gly Ser Arg Leu Arg Phe Ser Gln Asp Phe Met Ser Asn

145	Arg	Glu	Val	Trp	Leu	Glu	Gly	Val	Ser	Thr	Phe	Glu	Val	Thr	Lys	Arg	160
					165					170							175
	Lys	Gly	His	Asn	Phe	Lys	Val	Tyr	Ile	Asp	Gln	Ala	Phe	Val	Glu	Val	
				180					185								190
	Lys	Gly	Thr	Val	Phe	Arg	Val	Gln	Ser	Thr	Cys	Gln	Asp	Gly	Ala	Glu	
			195					200					205				
	Val	Thr	Leu	Phe	Ser	Gly	Lys	Val	Asp	Phe	Asn	Val	Lys	Ala	Ser	Gln	
		210					215					220					
	Arg	Lys	Val	Glu	Met	Lys	Pro	Leu	Gln	Gln	Ile	Val	Phe	His	Pro	Glu	
225						230					235						240
	Lys	Asp	Glu	Val	Ile	Leu	Lys	Asn	Ile	Gly	Asn	Ile	Ser	Trp	Asp	Glu	
				245						250							255
	Gly	Arg	Tyr	Lys	Phe	Val	Asp	Met	Arg	Met	Asp	Asp	Leu	Ile	Glu	Ala	
			260					265							270		
	Ile	His	Asp	Ile	Tyr	His	Ile	Pro	Val	Glu	Leu	Asp	Arg	Lys	Val	Ala	
		275					280						285				
	Arg	Asn	Asp	Leu	Phe	Thr	Gly	Tyr	Met	Arg	Tyr	Asp	Asp	Pro	Ala	Ser	
		290					295					300					
	Lys	Val	Ile	Glu	Lys	Ile	Cys	Ile	Asn	Met	Asn	Leu	Lys	Phe	Lys	Lys	
305						310					315						320
	Glu	Thr	Gln	Lys	Ile	Ile	Ile	Tyr	Lys								
				325													

<210> 8033
 <211> 90
 <212> PRT
 <213> B.fragilis

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	Glu	Ile	Asp	Leu	Phe	Val	Ile	Asn	Lys	Ile	Lys	Glu	Lys	Arg	Lys	Glu	
			20					25					30				
	Leu	Lys	Val	Ser	Gln	Arg	Gly	Met	Ala	Glu	Ile	Leu	Asp	Cys	Ser	Ala	
		35					40						45				
	Gly	Phe	Ile	Gly	Gln	Val	Glu	Ser	Glu	Asn	Ser	Asp	Thr	Lys	Tyr	Ser	
		50				55					60						
	Val	Tyr	Gln	Leu	Tyr	Leu	Ile	Ala	Lys	Asp	Phe	Asn	Cys	Ser	Pro	Ala	
65					70					75							80
	Asp	Phe	Phe	Pro	Pro	Phe	Asn	Ile	Lys	Asp							
				85						90							

<210> 8034
 <211> 832
 <212> PRT
 <213> B.fragilis

<400> 8034	Met	Lys	Lys	Phe	Leu	Pro	Asp	Leu	Ile	Ala	Ile	Leu	Ala	Phe	Ile	Val	
1					5					10					15		
	Ile	Ser	Phe	Ile	Tyr	Phe	Phe	Pro	Ala	Ile	Thr	Glu	Asp	Arg	Ile	Leu	
			20					25					30				
	Phe	Gln	His	Asp	Thr	Val	Ala	Gly	Ala	Gly	Ala	Gly	Gln	Glu	Ala	Lys	
		35					40						45				
	Glu	Tyr	Tyr	Glu	Arg	Thr	Gly	Glu	Arg	Thr	Arg	Trp	Thr	Asn	Ala	Leu	
		50				55					60						
	Phe	Gly	Gly	Met	Pro	Thr	Tyr	Gln	Met	Ser	Pro	Ser	Tyr	Asp	Ser	Thr	
65						70					75						80

Glu	Pro	Leu	Thr	Phe	Val	Gln	Lys	Val	Tyr	His	Leu	Phe	Leu	Pro	Asn
				85					90					95	
Tyr	Val	Trp	Leu	Thr	Phe	Ile	Met	Met	Leu	Gly	Phe	Tyr	Ile	Leu	Leu
			100					105					110		
Arg	Ala	Phe	Gly	Ile	Pro	Ala	Trp	Leu	Ala	Gly	Leu	Gly	Gly	Ile	Ile
		115					120					125			
Trp	Gly	Phe	Ser	Ser	Tyr	Phe	Phe	Ile	Leu	Ile	Ala	Ala	Gly	His	Ile
	130					135					140				
Trp	Lys	Phe	Ile	Thr	Leu	Ala	Tyr	Ile	Pro	Pro	Thr	Ile	Ala	Gly	Ile
145				150					155						160
Val	Leu	Ala	Tyr	Arg	Lys	Lys	Tyr	Leu	Leu	Gly	Gly	Ile	Ile	Thr	Ala
			165					170						175	
Leu	Phe	Met	Ala	Met	Gln	Ile	Leu	Ser	Asn	His	Val	Gln	Met	Thr	Tyr
		180					185					190			
Tyr	Phe	Leu	Phe	Val	Ile	Leu	Phe	Met	Val	Gly	Ala	Phe	Phe	Glu	Asp
		195					200				205				
Ala	Trp	Arg	Lys	Lys	Glu	Leu	Pro	Gln	Phe	Phe	Lys	Ala	Thr	Gly	Val
	210				215						220				
Leu	Ile	Val	Ala	Gly	Leu	Ile	Gly	Val	Ser	Ile	Asn	Leu	Ser	Asn	Leu
225				230						235					240
Tyr	His	Thr	Tyr	Glu	Tyr	Ser	Lys	Glu	Thr	Met	Arg	Gly	Lys	Ser	Glu
			245					250						255	
Leu	Lys	Tyr	Glu	Gly	Ala	Ala	Ala	Lys	Gln	Thr	Ser	Ser	Gly	Leu	Asn
		260					265						270		
Arg	Asp	Tyr	Ile	Thr	Gln	Trp	Ser	Tyr	Gly	Ile	Gly	Glu	Thr	Phe	Ser
	275					280					285				
Leu	Leu	Val	Pro	Asn	Val	Lys	Gly	Gly	Ala	Ser	Val	Pro	Leu	Ser	Arg
	290			295							300				
Ser	Glu	Lys	Ala	Met	Glu	Lys	Ala	Asn	Pro	Met	Tyr	Ser	Ser	Leu	Tyr
305				310					315						320
Ser	Gln	Leu	Thr	Gln	Tyr	Phe	Gly	Asp	Gln	Pro	Met	Thr	Ser	Gly	Pro
			325					330						335	
Val	Tyr	Val	Gly	Ala	Phe	Val	Leu	Met	Leu	Phe	Ile	Leu	Gly	Cys	Phe
		340					345					350			
Ile	Val	Lys	Gly	Pro	Met	Lys	Trp	Ala	Leu	Leu	Gly	Ala	Thr	Ile	Phe
		355					360				365				
Ser	Ile	Leu	Leu	Ser	Trp	Gly	Lys	Asn	Phe	Met	Gly	Leu	Thr	Asp	Phe
	370				375						380				
Phe	Ile	Asp	Tyr	Ile	Pro	Met	Tyr	Asn	Lys	Phe	Arg	Ala	Val	Ser	Ser
385				390					395						400
Ile	Leu	Val	Ile	Ala	Glu	Phe	Thr	Ile	Pro	Leu	Leu	Ala	Ile	Leu	Thr
			405					410						415	
Leu	Lys	Glu	Ile	Leu	Thr	Lys	Pro	Glu	Leu	Leu	Lys	Glu	Lys	Leu	Lys
		420					425					430			
Tyr	Ile	Tyr	Ile												

545		550		555		560									
Thr	Gln	Thr	Asp	Glu	Leu	Ile	Leu	Gln	Asp	Pro	Ser	Leu	Asp	Tyr	Arg
		565						570						575	
Val	Leu	Asn	Phe	Ala	Gly	Asn	Thr	Phe	Glu	Glu	Asn	Asn	Thr	Ser	Tyr
		580						585						590	
Trp	His	Lys	Ser	Val	Gly	Gly	Tyr	His	Ala	Ala	Lys	Leu	Arg	Arg	Tyr
		595					600						605		
Gln	Glu	Met	Ile	Asp	His	His	Ile	Ala	Lys	Glu	Met	Gln	Ala	Ala	Tyr
	610					615					620				
Gln	Glu	Val	Ala	Thr	Ala	Gly	Gly	Gln	Met	Asp	Ser	Val	Asn	Ala	Ala
625					630					635					640
Lys	Phe	Pro	Val	Leu	Asn	Met	Leu	Asn	Thr	Lys	Tyr	Phe	Ile	Phe	Pro
			645					650						655	
Ala	Gly	Gln	Gln	Gly	Gln	Thr	Val	Pro	Ile	Glu	Asn	Pro	Tyr	Thr	Phe
		660					665						670		
Gly	Asn	Ala	Trp	Phe	Ile	Asp	Lys	Ile	Gln	Tyr	Val	Asn	Asn	Ala	Asn
	675					680					685				
Glu	Glu	Ile	Asp	Ala	Ile	Gly	Gln	Val	Asp	Leu	Gln	Gln	Thr	Ala	Ile
	690				695					700					
Val	Asp	Ser	Lys	Phe	Lys	Glu	Ala	Leu	Lys	Gly	Val	Asn	Glu	Gly	Tyr
705			710						715						720
Lys	Asp	Ser	Leu	Ser	Thr	Ile	Arg	Leu	Thr	Ser	Tyr	Glu	Pro	Asn	Gln
		725						730						735	
Leu	Val	Tyr	Glu	Thr	Ser	Ser	Pro	Gln	Asp	Gly	Ile	Val	Val	Phe	Ser
	740						745					750			
Glu	Ile	Tyr	Tyr	Pro	Gly	Trp	Thr	Ala	Thr	Ile	Asp	Gly	Lys	Pro	Ala
	755					760					765				
Asp	Ile	Ala	Arg	Ala	Asp	Tyr	Ile	Leu	Arg	Ala	Met	Asn	Val	Pro	Ala
	770				775					780					
Gly	Lys	His	Thr	Ile	Glu	Met	Arg	Phe	Asp	Pro	Gln	Ser	Leu	His	Ile
785			790						795						800
Thr	Glu	Gly	Ile	Ala	Tyr	Gly	Ala	Met	Ala	Leu	Leu	Leu	Val	Gly	Val
		805					810							815	
Ile	Ile	Leu	Ile	Trp	Ile	Tyr	Arg	Lys	Lys	Tyr	Ser	Glu	Asn	Ser	Lys
		820					825						830		

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<211> 162

<212> PRT

<213> B.fragilis

<400> 8035

Gln	Leu	Glu	Phe	Thr	Phe	Ile	Ile	Met	Glu	Lys	Ile	Asp	Asn	Leu	Asp
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Arg	Gln	Ile	Leu	Glu	Ile	Ile	Ser	Gln	Asn	Ala	Arg	Ile	Pro	Phe	Lys
		20					25					30			
Asp	Val	Ala	Ala	Glu	Cys	Gly	Val	Ser	Arg	Ala	Ala	Ile	His	Gln	Arg
	35					40					45				
Val	Gln	Arg	Leu	Ile	Asp	Leu	Gly	Val	Ile	Val	Gly	Ser	Gly	Tyr	His
	50				55					60					
Val	Asn	Pro	Lys	Ser	Leu	Gly	Tyr	Arg	Thr	Cys	Thr	Tyr	Val	Gly	Ile
65			70					75							80
Lys	Leu	Glu	Lys	Gly	Ser	Met	Tyr	Lys	Ala	Val	Val	Ala	Glu	Leu	Gln
		85					90							95	
Lys	Ile	Pro	Glu	Ile	Val	Glu	Cys	His	Phe	Thr	Thr	Gly	Pro	Tyr	Thr
		100				105						110			
Met	Leu	Thr	Lys	Val	Tyr	Ala	Arg	Asp	Asn	Glu	His	Leu	Met	Asp	Leu
	115					120						125			
Leu	Asn	Asn	Lys	Met	Gln	Glu	Ile	Pro	Gly	Val	Thr	Ala	Thr	Glu	Thr

130 135 140
 Leu Ile Ser Leu Glu Gln Ser Ile Lys Lys Glu Ile Pro Ile His Ala
 145 150 155 160
 Asp Lys

<210> 8036
 <211> 417
 <212> PRT
 <213> B.fragilis

<400> 8036

Asn Ile Asn Ser Lys Tyr Met Lys Gln Leu Ile Leu Ser Cys Ile Phe
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 Val Leu Gly Phe Phe Phe Leu Pro Ile Leu Val Ser Gly Ala Asp Ala
 20 25 30
 Gln Glu Asn Tyr Leu Phe Ser Ile Ser Gly Glu Ile Asp Gly Leu Met
 35 40 45
 Pro Asn Asp Thr Leu Ser Phe Trp Lys Thr Thr Leu Pro Tyr Lys Gly
 50 55 60
 Glu Glu Gly Glu Val Ala Phe Asn Val Ile Val Ser Glu Pro Asn Lys
 65 70 75 80
 Phe Cys Tyr Ser Gly Glu Gln Pro His Thr Gln Cys Tyr Ser Met Ile
 85 90 95
 Tyr Lys Pro Val Ser Gly Glu Ser Gln Ala Ser Ser Arg Gln Ala Leu
 100 105 110
 Met Ile Ile Val Glu Glu Gly Asp Tyr His Leu Lys Gly Glu Thr Asp
 115 120 125
 Phe Ile Tyr Tyr Ser Ala Ile Ser Gly Gly Leu Tyr Asp Asp Pro Ser
 130 135 140
 Leu Lys Glu Ile Val His Met Glu Asp Ser Leu Glu Ile Ile Arg Thr
 145 150 155 160
 Arg Tyr Arg Lys Ile Val Asp Glu Ala Arg Lys Lys Gly Asp Met Glu
 165 170 175
 Lys Ala Lys Glu Tyr Val Asp Lys Phe Asn Arg Phe His Ser Asn His
 180 185 190
 Gln Glu Ser Tyr Ala Leu Leu Gln Arg Lys Thr Lys Glu Leu Val Ala
 195 200 205
 Asn Asn Pro Ser Ser Thr Trp Val Ile Val Glu Tyr Leu Gln Lys Val
 210 215 220
 Ser Tyr Ala Ala Pro Glu Glu Met Lys Ser Val Leu Leu Asn Met Asp
 225 230 235 240
 Gln Glu Ala Gln Asn Ser Tyr Tyr Gly Gln Ile Phe Arg Arg Glu Val
 245 250 255
 Glu Ala Ile Glu Arg Leu Ala Pro Gly Asn Glu Ala Pro Leu Phe Ser
 260 265 270
 Val Thr Thr Thr Asp Gly Lys Arg Ile Thr Ser Asp Asp Thr Arg Gly
 275 280 285
 Lys Tyr Leu Leu Leu Tyr His Trp Gly Leu Cys Pro Gly Ser Ile Ser
 290 295 300
 Val Asp Lys Arg Val Thr Val Phe Tyr Glu Lys Tyr Lys Asp His Leu
 305 310 315 320
 Ser Val Val Gly Ile Thr Asp Asn Met Glu Thr Ile Cys Glu Leu Asn
 325 330 335
 Lys Asn Val Gly Glu Asp Asp Glu Val Leu Gly Met Lys Leu Lys Pro
 340 345 350
 Val Leu Glu Asn Met Leu Ala His Pro Trp Pro Glu Val Glu Ser Thr
 355 360 365
 Gly Asp Asn His Lys Ile Ile Glu Asp Phe Ala Phe Ala Gly Leu Pro

118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

370 375 380
 Tyr Phe Val Phe Ile Ser Pro Asp Gly Lys Ile Ile Ser Arg Asp Phe
 385 390 395 400
 Arg Lys Ala Phe Asp Lys Ala Gln Glu Val Met Lys Ser Glu Phe Asp
 405 410 415
 Asp

<210> 8037
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 <212> PRT
 <213> B.fragilis

<400> 8037
 Arg Ser Ile Ser Thr Ser Thr Tyr Arg Ser Ser Pro Arg Arg Leu Asn
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 Thr Glu Ser Ser Ala Ile Leu Lys Val Ile Tyr Arg Ser Pro Ala Gly
 20 25 30
 Pro Pro Leu Met Pro Ser Pro Pro Tyr Pro Phe Asn Leu Ile Thr Cys
 35 40 45
 Pro Ser Ala Thr Pro Ala Gly Ile Val Ile Arg Thr Cys Leu Pro Phe
 50 55 60
 Thr Phe Asn Thr Cys Leu Trp Val Arg Ala Ala Ser Arg Arg Asp Arg
 65 70 75 80
 Cys Asn Ser Ala Leu Lys Ser Cys Pro Arg Lys Pro Ala Leu Pro Arg
 85 90 95
 Pro Pro Pro Pro Leu Cys Pro Asn Ile Asp Ser Lys Lys Ser Glu Asn
 100 105 110
 Pro Pro Ala Ser Pro Pro Glu Asn Pro Ser Pro Ser Asp Glu Tyr Gln
 115 120 125

<210> 8038
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 <212> PRT
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<400> 8038
 Thr Thr Thr Thr Ser Arg Val Arg Thr Met Thr Ser Gly Tyr Val Lys
 1 5 10 15
 Arg Thr Leu Arg Cys Ser Glu Arg Trp Gly Tyr Val Glu Asn Ala Gly
 20 25 30
 Leu Thr Cys Asn Pro Ala Arg Ser Arg Ile His Tyr Arg Phe Asp Phe
 35 40 45
 Gly Arg Tyr Leu Gly Ile Asp Lys Cys Gln His Leu Glu Thr Leu Leu
 50 55 60
 Pro Phe Gly Thr Phe Val Val Phe Cys Val Glu Ser Arg Arg Ile Ile
 65 70 75 80
 Ser Ile Phe Thr Val Asp Ser Ser Gln His Ala Ile Met Thr Ile Gln
 85 90 95
 Leu Leu Leu Val Thr Gly Val Thr Asp Cys Leu Trp Leu Tyr Val Leu
 100 105 110
 Ser Leu Leu Leu Phe Leu Thr Val Cys Phe Leu Leu Tyr Gln Asn Phe
 115 120 125
 Leu Leu Arg Lys Ser Ala Ser Ala Asp Asp Asp Tyr Arg Arg Phe Leu
 130 135 140
 Phe Asp Ile Leu Asp Asn Leu Pro Phe Pro Ile Met Val Lys Asp Ile
 145 150 155 160
 Gln Glu Gln Phe Lys Tyr Thr Tyr Trp Asn Lys Glu Ser Glu Leu Gln
 165 170 175

Ser Gly Ile Ser Arg Lys Asp Ala Val Gly Phe Ser Asp Val Asp Ile
 180 185 190
 Phe Gly Glu Glu Arg Gly Lys Gln Tyr Arg Lys Ile Asp Glu Asp Leu
 195 200 205
 Val Arg Ala Gly Ile Pro Tyr Lys Ala Glu Glu Arg Tyr Val Thr Ala
 210 215 220
 Asp Gly Lys Val His Asp Thr Leu Val Met Lys Ser Ile Ile Ser Ser
 225 230 235 240
 Gly Lys Leu Gly Lys Trp Leu Leu Val Ala Arg Trp Glu Ile Thr Gln
 245 250 255
 Leu Lys Met Tyr Glu Arg Glu Leu Leu Ala Ala Lys Glu Gln Leu Glu
 260 265 270
 Gly Ala Val Cys Lys Gln Lys Leu Ala Leu Arg Ser Ile Asp Phe Gly
 275 280 285
 Leu Ile Tyr Ile Asp Arg Asn Tyr Leu Val Gln Trp Glu Glu Thr Gly
 290 295 300
 Asn Ile Lys Asn Leu Val Ser Gly Arg His Tyr Thr Pro Gly Thr Val
 305 310 315 320
 Cys Tyr Arg Thr Thr Gly Gln Gly Thr Gln Pro Cys Gly Lys Cys Ala
 325 330 335
 Phe Arg Glu Ala Ile Gly Thr Gly Lys Ile Val Arg His Ile Thr His
 340 345 350
 Val Asp His Val Asp Phe Glu Ile Thr Ala Thr Pro Val Tyr Asp Asp
 355 360 365
 Thr Gly Asn Glu Ile Ile Gly Gly Leu Leu Arg Phe Glu Asp Ile Thr
 370 375 380
 Glu Lys Leu Lys Val Glu Arg Met Leu Gln Glu Ala Lys Glu Lys Ala
 385 390 395 400
 Glu Glu Ser Asn Arg Leu Lys Ser Ala Phe Leu Ala Asn Met Ser His
 405 410 415
 Glu Ile Arg Thr Pro Leu Asn Ala Ile Ile Gly Phe Ser Asp Leu Ile
 420 425 430
 Cys Gln Thr Asp Asp Ala Glu Glu Lys Glu Glu Tyr Ile Arg Ile Val
 435 440 445
 Thr Ser Asn Asn Glu Leu Leu Leu Gln Leu Ile Asp Asp Ile Leu Asp
 450 455 460
 Leu Ser Lys Ile Glu Ala Gly Thr Met Asp Phe Ser Tyr Ala Pro Thr
 465 470 475 480
 Asp Ile Asn Glu Leu Met Glu Asp Ile Cys Leu Gln Met Gln Gln Lys
 485 490 495
 Asn Gln Arg Pro Glu Val Gln Ile Met Phe Thr Glu Lys Glu Pro Gly
 500 505 510
 Cys Val Ile Asn Thr Asp Arg Leu Arg Leu Ser Gln Val Ile Met Asn
 515 520 525
 Leu Met Asn Asn Ala Met Lys Phe Thr Ser Glu Gly Ser Ile Thr Leu
 530 535 540
 Gly Tyr Arg Leu Thr Arg Gln Lys Asp Glu Leu Tyr Phe Phe Val Lys
 545 550 555 560
 Asp Thr Gly Ile Gly Ile Pro Ala Asp Gln Ala Gly Lys Val Phe Glu
 565 570 575
 Arg Phe Val Lys Leu Asn Thr Phe Ile Lys Gly Thr Gly Leu Gly Leu
 580 585 590
 Ala Ile Cys Arg Val Ile Ile Glu Arg Leu Gly Gly Thr Ile Gly Val
 595 600 605
 Glu Thr Arg Glu Gly Lys Gly Ser Cys Phe Trp Phe Arg Leu Pro Val
 610 615 620
 Arg Glu Asp Met Leu Leu Glu Ser Pro Val Arg
 625 630 635

180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620
 625 630 635

<210> 8039
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8039
 Gly Arg Thr Thr Asp Arg Gly Leu Gly Gln Tyr Thr Ser Leu Phe Cys
 1 5 10 15
 Leu Thr Ser Leu Asn Gly Leu Leu Asn Glu Glu Thr Met Val Lys Leu
 20 25 30
 Lys Asp Trp Asn Ser Phe Leu Arg Lys Thr Leu Val Glu Val Leu Met
 35 40 45
 Gly Ser Thr Pro Leu Ala Gln Asn Tyr Gln Arg Asp Ser Val Phe Arg
 50 55 60
 Trp Glu Gly Pro Leu Tyr Cys Pro Val Ser Lys Gly His Arg
 65 70 75

<210> 8040
 <211> 1066
 <212> PRT
 <213> B.fragilis

<400> 8040
 Lys Asn Gln Thr Lys Pro Leu Leu Leu Thr Gln Asn Lys Ile Val Met
 1 5 10 15
 Leu Lys Ile Thr Arg Gln Val Thr Leu Leu Leu Ala Gly Ala Leu
 20 25 30
 Ser Phe Pro Ala Tyr Ser Tyr Ala Thr Gln Ala Thr Glu Val Leu Val
 35 40 45
 Pro Glu Val Thr Gln Glu Lys Val Thr Gly Thr Val Glu Asp Ala Leu
 50 55 60
 Gly Pro Val Ile Gly Ala Ser Val Met Val Lys Gly Thr Thr Asn Gly
 65 70 75 80
 Val Ile Thr Asp Leu Glu Gly Lys Phe Ser Leu Asn Asp Val Lys Lys
 85 90 95
 Gly Asp Ile Ile Val Ile Ser Tyr Ile Gly Tyr Val Thr Gln Glu Ile
 100 105 110
 Pro Tyr Thr Gly Lys Pro Ile Gln Val Lys Leu Ala Glu Asp Ser Lys
 115 120 125
 Ala Leu Glu Glu Val Val Val Val Gly Tyr Ala Thr Val Lys Lys Ala
 130 135 140
 Asn Leu Thr Gly Ala Val Ser Ala Val Asp Gly Lys Val Leu Glu Asp
 145 150 155 160
 Arg Pro Ile Val Asn Leu Gly Gln Gly Leu Gln Gly Ala Ile Pro Asn
 165 170 175
 Leu Asn Val Thr Thr Ser Gly Arg Pro Gly Gln Gly Ser Ser Phe Asn
 180 185 190
 Ile Arg Gly Thr Thr Ala Met Ser Gly Ser Ser Pro Leu Val Leu Val
 195 200 205
 Asp Gly Val Glu Met Asp Pro Asn Leu Ile Asn Pro Gln Asp Val Lys
 210 215 220
 Ser Val Ser Val Leu Lys Asp Ala Ala Ser Ala Ser Ile Tyr Gly Ala
 225 230 235 240
 Arg Ala Ala Tyr Gly Val Val Leu Ile Thr Thr Lys Gly Gly Arg Lys
 245 250 255
 Asp Gln Pro Thr Gln Val Ser Phe Asp Ala Ser Val Ser Phe Asn Gly
 260 265 270
 Pro Thr Thr Arg Pro Thr Tyr Met Asn Ser Met Gln Tyr Ala Thr Trp
 275 280 285

Met	Asn	Thr	Ala	Gln	Gln	Asn	Thr	Val	Gly	Arg	Asp	Tyr	Phe	Asp	Ala
290						295					300				
Glu	Trp	Met	Gln	His	Ile	Glu	Ala	Tyr	Tyr	Lys	Asp	Pro	Val	Asn	Asn
305					310					315					320
Ser	Pro	Val	Phe	Ile	His	Ser	Asp	Pro	Ser	Ile	Ser	Lys	Asn	Gly	Thr
				325						330				335	
Lys	Tyr	Thr	Tyr	Ala	Gly	Asn	Thr	Asn	Trp	Met	Lys	Glu	Leu	Tyr	Lys
				340					345				350		
Lys	Asn	Tyr	Pro	Val	Gln	Lys	Tyr	Asn	Val	Asn	Ile	Ser	Gly	Gly	Gly
				355				360				365			
Lys	Lys	Ala	Thr	Tyr	Tyr	Thr	Ser	Leu	Gly	Tyr	Thr	Asp	Gln	Gly	Ser
				370				375				380			
Leu	Ile	Arg	Phe	Gly	Asn	Glu	Gln	Phe	Lys	Lys	Phe	Asn	Val	Met	Asn
385					390					395					400
Asn	Ile	Asn	Tyr	Asp	Val	Asn	Asp	Trp	Leu	His	Leu	Ser	Met	Lys	Thr
				405					410					415	
Ser	Phe	Asn	Arg	Thr	Lys	Leu	Arg	Gly	Leu	Asn	Gln	Asp	Asn	Val	His
				420				425					430		
Gly	Asp	Asn	Phe	Met	Gly	Gly	Asp	Thr	Arg	Pro	Ile	Met	Pro	Val	Lys
				435				440					445		
His	Pro	Asp	Gly	Asn	Trp	Ala	Gly	Gln	Gly	Asp	Phe	Thr	Asn	Phe	Pro
				450				455					460		
Ala	Ile	Leu	Glu	Asp	Gly	Gly	Ser	Arg	Leu	Thr	Asn	Lys	Asn	Asp	Leu
465					470					475					480
Trp	Asn	Thr	Ile	Thr	Met	Lys	Leu	Thr	Pro	Ile	Lys	Gly	Met	Ser	Ile
				485					490					495	
Asn	Met	Asp	Tyr	Thr	Phe	Asn	Tyr	Tyr	Ser	Glu	Asn	Asn	Lys	Val	His
				500				505					510		
Met	Lys	Ser	Phe	Asp	Glu	Tyr	Gly	Ala	Asn	Gly	Gln	Phe	Leu	Gln	Thr
				515				520				525			
Phe	Ala	Trp	Thr	Asn	Pro	Asn	Ser	Val	Ser	Gln	Ser	Gln	Ala	Asn	Asp
				530				535				540			
Thr	Tyr	Asn	Ala	Phe	Asn	Phe	Phe	Gly	Asp	Tyr	Glu	Lys	Thr	Leu	Gly
545					550					555					560
Lys	His	Tyr	Leu	Lys	Gly	Met	Ile	Gly	Tyr	Asn	Gln	Glu	Ser	Lys	His
				565					570					575	
Thr	Thr	Gly	Phe	Asn	Ala	Gly	Arg	Glu	Gln	Leu	Ile	Ser	Asn	Asp	Leu
				580				585					590		
Gly	Ser	Leu	Ser	Tyr	Ala	Thr	Gly	Asp	Arg	Trp	Val	Gly	Ser	Ser	Asp
				595				600				605			
Asn	Ser	Trp	Ala	Thr	Arg	Ser	Gly	Phe	Phe	Arg	Ile	Asn	Tyr	Gly	Tyr
				610				615			620				
Asp	Glu	Arg	Tyr	Leu	Leu	Glu	Val	Asn	Gly	Arg	Tyr	Asp	Leu	Ser	Ser
625					630					635					640
Lys	Phe	Pro	Lys	His	Asp	Arg	Ala	Val	Phe	Asn	Pro	Ser	Phe	Ser	Ala
				645					650					655	
Ala	Trp	Arg	Leu	Ser	Asn	Glu	Ser	Trp	Phe	Lys	Ser	Trp	Thr	Asn	Ser
				660				665					670		
Phe	Phe	Asp	Glu	Leu	Lys	Ile	Arg	Gly	Ser	Tyr	Gly	Ser	Leu	Gly	Asn
				675				680				685			
Gln	Ala	Leu	Asn	Asn	Gly	Trp	Tyr	Ala	Tyr	Leu	Ser	Asn	Tyr	Ser	Thr
				690				695			700				
Gly	Gln	Ile	Ser	Trp	Ile	Met	Gly	Ser	Asn	Gln	Pro	Gln	Tyr	Val	Val
705					710					715					720
Pro	Gly	Gly	Leu	Val	Ser	Ser	Ser	Ile	Thr	Trp	Glu	Thr	Val	Thr	Gln
				725					730					735	
Trp	Asp	Leu	Gly	Leu	Asp	Phe	Asn	Phe	Leu	Asn	Ser	Arg	Leu	Lys	Gly
				740				745				750			
Ala	Phe	Asp	Tyr	Tyr	Gln	Arg	Arg	Thr	Ser	Asp	Ile	Leu	Ala	Ala	Gly

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      755              760              765
Lys Ile Leu Pro Gly Val Leu Gly Ala Asn Glu Pro Gln Glu Asn Ala
  770              775              780
Ala Glu Ser Leu Thr Lys Gly Trp Glu Phe Glu Ile Ser Trp Asn Asp
  785              790              795              800
Gln Leu Ala Asn Gly Phe His Tyr Thr Val Gly Phe Asn Leu Ser Asp
      805              810              815
Tyr Gln Ser Glu Val Thr Lys Phe Asp Asn Glu Ser Lys Glu Leu Gly
      820              825              830
Asn Trp Tyr Val Gly Gln Lys Gln Gly Glu Ile Trp Gly Tyr Glu Thr
      835              840              845
Tyr Gly Leu Phe Gln Ser Glu Gln Glu Ile Ala Gly Ala Ala Asn Gln
      850              855              860
Asp Lys Val Ser Gly Gly Ile Lys Leu Met Pro Gly Asp Ile Arg Phe
  865              870              875              880
Val Asp Arg Asn Asn Asp Gly Val Ile Asp Trp Gly Asp Asn Thr Val
      885              890              895
Asp Asn Pro Gly Asp Lys Lys Ile Ile Gly Asn Ser Thr Pro Arg Tyr
      900              905              910
His Tyr Gly Ile Asn Leu Gly Ala Asp Trp Lys Gly Phe Asp Leu Gly
      915              920              925
Ile Phe Phe Gln Gly Val Gly Lys Arg Asp Leu Tyr Leu Pro Gly Thr
      930              935              940
Ser Phe Arg Ser His Tyr Gly Ser Glu Trp Gln Val Pro Ser Ala Tyr
  945              950              955              960
Asn Asn Asp Tyr Trp Thr Glu Glu Asn Thr Gly Ala Tyr Phe Pro Arg
      965              970              975
Ala Arg Phe Asn Gly Gly Ser Ala Ile Asn Gln Ala Gln Thr Arg Tyr
      980              985              990
Met Val Asp Ala Ser Tyr Cys Arg Leu Lys Ser Val Ser Ile Gly Tyr
      995              1000              1005
Thr Leu Pro Lys Val Leu Thr Gln Lys Ala Ser Ile Glu Lys Ile Arg
      1010              1015              1020
Ile Tyr Phe Thr Gly Glu Asn Leu Phe Thr Ile Ser Asp Thr Pro Asp
  1025              1030              1035              1040
Gly Leu Asp Pro Glu Leu Asp Asn Pro Tyr Thr Tyr Pro Met Gln Arg
      1045              1050              1055
Ser Leu Ser Val Gly Leu Ser Leu Thr Phe
      1060              1065

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<210> 8041
 <211> 68
 <212> PRT
 <213> B.fragilis

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<400> 8041
Thr Pro Pro Thr Pro Arg Ala Asn Gln Ser Val Lys Ala Ser Ala Gly
1              5              10              15
Cys Gly Gly Leu Thr Asn Asp Gly Tyr Ser Leu Ile Ser Ser Asp Gly
      20              25              30
Leu Gln Pro Gly Asp Lys Ile Val Ser Ser Gly Val His His Ile Glu
      35              40              45
Asn Gly Glu Thr Val Lys Thr Leu Pro Glu Ile Thr His Thr Asn Ile
      50              55              60
Gly Gly Leu Leu
65

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<210> 8042
 <211> 206

<212> PRT
 <213> B.fragilis

<400> 8042

Lys Glu Thr Ala Asn Ser Phe Ser Cys Cys Thr Pro Ala Gly His Thr
 1 5 10 15
 Ser Thr Ile Gly Asn Asp Ile Leu Arg Lys Val Arg Phe Ser Asn Tyr
 20 25 30
 Asp Ser Pro Ala Asp Gln Asn Leu Arg Tyr Gln His Asn Val Ile Asn
 35 40 45
 Ala Tyr Ile Asn Ser Ile Arg Tyr Thr Asp Asp Phe Leu Ser Arg Leu
 50 55 60
 Ile Val Val Leu Gln Gln Gln Asp Ala Gly Ser Asp Ile Leu Tyr Thr
 65 70 75 80
 Ser Asp His Gly Glu Asp Ile Cys Asp Asp His Cys His Leu Phe Val
 85 90 95
 His Ala Ser Pro Val His Ser Lys Tyr Gln Leu His Val Pro Phe Ile
 100 105 110
 Val Trp Thr Ser Asp Thr Tyr Arg Glu Lys Tyr Pro Glu His Met Asp
 115 120 125
 Ala Ile Gln Lys Asn Arg His Lys Ser Val Val Ser Asn Arg Val Val
 130 135 140
 Phe His Ser Val Leu Asp Leu Ala Gly Val Thr Thr Thr Tyr Val Asn
 145 150 155 160
 Asp Ser Leu Ser Val Ala Ser Pro Ser Tyr Thr Glu Phe Pro Arg Phe
 165 170 175
 Tyr Leu Asn Asp His Asn Glu Pro Arg Ser Tyr Asp Asp Ile Gly Leu
 180 185 190
 Arg Lys Glu Asp Phe Glu Met Phe Gly Lys Met Gly Ile Arg
 195 200 205

<210> 8043

<211> 66

<212> PRT

<213> B.fragilis

<400> 8043

Ile Pro Phe Leu Ile Asp Arg Gly Glu Ser Lys Ile Leu Cys Leu Lys
 1 5 10 15
 Pro Gln Thr Met Asn Ile Pro Asn Thr Ser Tyr Glu Val Asp Phe Glu
 20 25 30
 Arg Gly Asn Pro Ile Phe Leu Lys Ala Leu Arg Ala Arg Leu Pro Phe
 35 40 45
 Gly Lys Leu Trp Asp Leu Gly Ile Arg Ile Asn Asn Arg Thr Phe Gln
 50 55 60
 Pro Phe
 65

<210> 8044

<211> 282

<212> PRT

<213> B.fragilis

<400> 8044

Met Ser Val Tyr Lys Asn Thr Ser Phe Val Leu Pro Leu Gln Lys Lys
 1 5 10 15
 Ser Thr Lys Lys Ala Leu Leu Thr Ile Lys Ser Pro Ala Lys Glu Ile
 20 25 30
 Glu Ser Thr Asn Arg Gly Ile Leu Ser Val Ile Ile Tyr Leu Cys Ser

35	40	45
Pro Lys Lys Ile Pro Ile Ser Asn Met Lys Lys Ile Trp Ile Leu Ala		
50	55	60
Val Leu Thr Ile Cys Ser Val Ala Thr Gln Ala Gln Glu Val Phe Ile		
65	70	75
Asn Ala Asp Leu Val Ser Ser Tyr Ile Trp Arg Gly Met Lys Asn Gly		
	85	90
Asn Ala Ser Val Gln Pro Thr Leu Gly Val Glu Trp Lys Gly Trp Thr		
	100	105
Leu Ser Ala Trp Gly Ser Thr Glu Phe Arg Asn Glu Asn Asn Glu Ile		
	115	120
Asp Leu Thr Leu Glu Tyr Glu Tyr Lys Asn Leu Gln Leu Cys Leu Asn		
	130	135
Asn Tyr Phe Tyr Gln Ser Glu Asn Glu Pro Phe Lys Tyr Phe His Tyr		
	145	150
Thr Pro Arg Thr Thr Gly His Thr Phe Glu Ala Gly Ala Val Tyr Thr		
	165	170
Val Ser Glu Arg Phe Pro Leu Ser Ile Gly Trp Tyr Thr Thr Phe Ala		
	180	185
Gly Asn Asp Tyr Arg Glu Asn Glu Glu Arg Ala Trp Ser Ser Tyr Cys		
	195	200
Glu Phe Ser Tyr Pro Phe Thr Val Lys Gly Val Asp Leu Ala Val Glu		
	210	215
Ala Gly Phe Thr Pro Trp Glu Gly Glu Tyr Ala Asp Lys Leu Asn Val		
	225	230
Val Asn Val Gly Leu Ser Ala Thr Lys Thr Leu Asn Ile Ser Ser Gly		
	245	250
Phe Thr Pro Ala Ile Phe Gly Lys Leu Ile Ala Asn Pro Tyr Glu Asn		
	260	265
Arg Phe Tyr Phe Val Phe Gly Ile Ser Leu		
	275	280

<210> 8045

<211> 309

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (22)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8045

Asn Leu Ala Tyr Gly Leu Ile Trp Asn Arg Phe Leu Ile Lys Asn Arg		
1	5	10
Arg Met Ile Asp Thr Xaa Met Pro Phe Arg Arg Ile Leu Leu Thr Ser		
	20	25
Asp Thr Phe Gln Ile Leu Lys Glu Gly Gln Ile Ile Ser Thr Phe Asn		
	35	40
Lys Cys Gly Ile Phe Tyr Cys Gln Arg Gly Ser Val Glu Val Ser Leu		
	50	55
Glu Gly Cys His Tyr His Ile Lys Pro Gly Asp Val Tyr Ile Tyr Met		
	65	70
Ala Ser Thr Leu Val His Leu Leu His Lys Ser Glu Asp Ala Glu Gly		
	85	90
Ile Met Val Glu Val Asp Phe Tyr Tyr Ile Leu Pro Ile Val Asn Lys		
	100	105
Val Ile Asn Val Glu Ser Gln Leu Phe Met Arg Lys Asn Pro Cys Val		
	115	120
		125

Ser Leu Ser Gly Glu Gln Cys Ala His Phe Glu Tyr Leu Leu Asn Asn
 130 135 140
 Leu Trp Asp Arg Ile Asn Ala Glu Asp Cys Gln Lys Glu Asn Val Gln
 145 150 155 160
 Tyr Gln His Leu Lys Leu Glu Leu Ile Lys Ser Met Gly Gln Thr Ile
 165 170 175
 Cys Tyr Glu Ile Leu Asn Met Tyr Phe Thr Asn Gln Pro Leu Gln Pro
 180 185 190
 Leu Gln Gln Gly Lys Lys Asp Val Val Phe Gln Asn Phe Met Leu Ser
 195 200 205
 Leu Phe Arg Phe Tyr Arg Lys Glu Arg Asp Val Ser Phe Tyr Ala Arg
 210 215 220
 Met Gln His Ile Thr Pro Arg Tyr Phe Ser Ala Ile Ile Lys Glu Lys
 225 230 235 240
 Thr Gly Asp Ser Ala Leu Gln Trp Ile Val Arg Met Val Ile Thr Glu
 245 250 255
 Ala Lys Gln Leu Leu Glu Glu Ser Asp Leu Ser Ile Lys Glu Ile Ala
 260 265 270
 Asp Gln Leu Asn Phe Pro Thr Gln Ser Phe Phe Gly Lys Tyr Phe Lys
 275 280 285
 Gln Tyr Val Gly Val Ser Pro Lys Glu Tyr Arg Asn Asn Thr Ala Thr
 290 295 300
 Thr Arg Ile Lys Arg
 305

<210> 8046
 <211> 754
 <212> PRT
 <213> B.fragilis

<400> 8046
 Asn His Ser His Lys Tyr Arg Arg Thr Val Ile Met Asp Ile Ser Lys
 1 5 10 15
 Trp Ala Phe His Asn Arg Asn Leu Ile Tyr Phe Leu Ile Ala Val Leu
 20 25 30
 Met Phe Gly Gly Ala Tyr Ser Cys Tyr Gln Met Ser Lys Leu Glu Asp
 35 40 45
 Pro Glu Ile Lys Val Lys Leu Ala Met Val Val Thr Thr Tyr Pro Gly
 50 55 60
 Ala Ser Ala His Gln Val Glu Leu Glu Val Thr Asp Val Leu Glu Lys
 65 70 75 80
 Asn Ile Arg Thr Met Gly Asn Ile Asp Asn Ile Glu Ser Tyr Ser Tyr
 85 90 95
 Asn Asp Leu Ser Leu Ile Gln Ile Glu Leu Leu Ser Thr Val Pro Asp
 100 105 110
 Asp Asp Val Glu Gln Cys Trp Asp Met Leu Arg Arg Lys Val Asn Asp
 115 120 125
 Ala Arg Ala Ser Leu Pro Glu Gly Val Ser Ala Pro Ile Val Lys Asp
 130 135 140
 Asp Phe Gly Asn Val Tyr Gly Met Phe Tyr Ala Leu Thr Gly Asp Gly
 145 150 155 160
 Leu Ser Asp Arg Glu Leu Ser Asp Tyr Ala Glu Leu Ile Lys Arg Glu
 165 170 175
 Val Gly Glu Leu Glu Gly Val Asp Arg Ile Asp Leu Tyr Gly Lys Arg
 180 185 190
 Pro Glu Cys Ile Asn Ile Ser Leu Leu Gln Asp Arg Met Ala Asn Leu
 195 200 205
 Gly Val Lys Pro Ala Glu Val Leu Ala Thr Leu Asn Gly Gln Asn Lys
 210 215 220

Thr Thr Tyr Thr Gly Tyr Tyr Asp Asn Gly Asp Asn Arg Ile Arg Val
 225 230 235 240
 Thr Val Asn Asp Lys Phe Lys Thr Val Glu Asp Ile Gly Lys Met Leu
 245 250 255
 Ile Gln Gly His Asp Asp Asp Gln Leu Arg Leu Ser Asp Ile Ala Gln
 260 265 270
 Ile Glu Lys Gly Tyr Glu Glu Pro Val Arg Asn Glu Met Tyr Tyr Asp
 275 280 285
 Gly Glu Arg Ala Leu Gly Ile Leu Ile Ala Ala Thr Ser Gly Ser Asp
 290 295 300
 Ile Val Lys Val Gly His Ala Val Glu Ala Arg Leu Ala Glu Leu Lys
 305 310 315 320
 Ala Glu Arg Leu Pro Ala Gly Val Glu Tyr Gln Lys Val Phe Tyr Gln
 325 330 335
 Pro Glu His Val Gly Glu Ser Leu Gly Thr Phe Val Ile Asn Leu Ile
 340 345 350
 Glu Ser Val Ile Ile Val Val Leu Ile Leu Met Ile Ala Met Gly Phe
 355 360 365
 Lys Ser Gly Val Ile Ile Gly Ile Ser Leu Val Val Thr Val Phe Gly
 370 375 380
 Ser Phe Leu Phe Leu Tyr Ser Ala Gly Gly Thr Met Gln Arg Val Ser
 385 390 395 400
 Leu Ala Ala Phe Val Leu Ala Met Gly Met Leu Val Asp Asn Ala Ile
 405 410 415
 Val Ile Ile Asp Gly Ile Leu Val Asp Leu Lys Ala Gly Lys Asp Arg
 420 425 430
 Met Glu Ala Met Thr Ala Ile Gly Arg Gln Thr Ala Met Pro Leu Leu
 435 440 445
 Gly Ala Thr Leu Ile Ala Ile Ile Ala Phe Leu Pro Ile Tyr Met Ser
 450 455 460
 Pro Asp Thr Ala Gly Val Tyr Thr Arg Asp Leu Phe Ile Val Leu Ala
 465 470 475 480
 Val Ser Leu Leu Leu Ser Trp Val Leu Ala Leu Val His Val Pro Leu
 485 490 495
 Met Ala Asn Arg Arg Leu His Phe Ala Val Glu Ala Tyr Ser Gly Gly
 500 505 510
 Lys Arg Val Tyr Lys Gly Lys Ile Tyr Ala Ala Leu Arg Thr Ala Leu
 515 520 525
 Arg Phe Gly Leu Ala His Arg Trp Ser Phe Val Phe Thr Met Val Gly
 530 535 540
 Leu Leu Ala Leu Ser Val Phe Gly Tyr Gln Tyr Met Arg Gln Gly Phe
 545 550 555 560
 Phe Pro Asp Met Val Tyr Asp Gln Leu Tyr Met Glu Tyr Lys Leu Pro
 565 570 575
 Glu Gly Asn Asn Tyr Thr Arg Val Glu Gln Asp Leu Lys Glu Ile Glu
 580 585 590
 Ala Tyr Leu Lys Gly Arg Lys Glu Ile Thr His Val Thr Ala Ser Ile
 595 600 605
 Gly Gly Thr Pro Gly Arg Tyr Asn Leu Val Arg Ser Val Ala Asn Pro
 610 615 620
 Ser Leu Ser Tyr Gly Glu Leu Ile Ile Asp Phe Thr Ser Pro Glu Glu
 625 630 635 640
 Leu Val Asp Asn Met Asp Glu Ile Gln Arg Tyr Leu Ser Ala Thr Tyr
 645 650 655
 Pro Asp Ala Tyr Ile Lys Leu Lys Arg Tyr Asn Leu Met Phe Lys Lys
 660 665 670
 Tyr Pro Ile Glu Ala Gln Phe Leu Gly Pro Asp Pro Ala Val Leu His
 675 680 685
 Gln Leu Ala Asp Ser Ala Arg Asn Ile Met Lys Asn Thr Pro Glu Val

690 695 700
 Cys Leu Ile Thr Thr Asp Trp Glu Pro Gln Ile Pro Val Leu Thr Ile
 705 710 715 720
 Glu Tyr Asp Gln Pro Ala Ala Arg Ala Leu Gly Leu Ser Arg Ser Asp
 725 730 735
 Val Ser Met Ser Leu Leu Thr Ala Cys Arg Gly Ile Pro Ile Gly Ser
 740 745 750
 Phe Tyr

<210> 8047
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8047
 Cys Leu Pro Gln Ala Met Pro Val Lys Val Val Arg Glu Asn Ile Pro
 1 5 10 15
 Glu Glu Asp Ala Gly Pro Ala Ser Ala Tyr Gln Ala Pro Val Ser Ala
 20 25 30
 Lys Gly Ala Val Thr Asn Ala Pro Glu Met Tyr Trp Glu Thr Pro Ser
 35 40 45
 Pro Tyr Pro Val Thr Pro Phe Leu Pro Asp Ser Gly Gly Val Ala Ser
 50 55 60
 Ala Ser Asp Ser Glu Ile Val Tyr Val Glu Glu Asp
 65 70 75

<210> 8048
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 8048
 Cys Phe Thr Asn Tyr Ser Val Ile Met Ile Lys Cys Ile Ala Val Asp
 1 5 10 15
 Asp Glu Pro Leu Ala Leu Glu Gln Leu Thr Gly Tyr Ile Ala Arg Val
 20 25 30
 Pro Phe Leu Gln Leu Ile Ala Ser Cys Gln Asp Ala Phe Ser Ala Met
 35 40 45
 Gln Val Leu Ser Glu Glu Glu Val Asp Leu Met Phe Val Asp Ile His
 50 55 60
 Met Pro Asp Leu Asn Gly Leu Asp Leu Val Arg Ser Leu Val Val Lys
 65 70 75 80
 Pro Leu Ile Val Phe Thr Thr Ala Tyr Pro Glu Tyr Ala Val Glu Gly
 85 90 95
 Phe Lys Val Asp Ala Val Asp Tyr Leu Leu Lys Pro Phe Glu Phe Gln
 100 105 110
 Asp Leu Leu Lys Ala Ala Asp Lys Ala Arg Arg Gln Phe Glu Tyr His
 115 120 125
 Leu Gln Asp Asn Gly Gly Gly Thr Glu Thr Asp Leu Leu Glu Lys Asp
 130 135 140
 Gly Ser Leu Phe Val Lys Ser Glu Tyr Lys Ile Ile Arg Ile Asn Val
 145 150 155 160
 Ala Asp Ile Cys Tyr Ile Glu Gly Met Ser Glu Tyr Val Arg Ile Tyr
 165 170 175
 Thr Asp Thr Ala Asp Lys Pro Val Val Thr Leu Leu Ser Met Arg Lys
 180 185 190
 Leu Glu Glu Arg Leu Pro Gln Glu Met Phe Met Arg Val His Arg Ser
 195 200 205

Tyr Ile Val Asn Leu Arg Lys Ile Thr Glu Val Ser Arg Leu Arg Ile
 210 215 220
 Ile Phe Asn Lys Asn Ile Tyr Ile Pro Val Gly Asp Asn Tyr Lys Glu
 225 230 235 240
 Arg Phe Thr Glu Tyr Ile Asn Lys Ile Cys Val Ser Ser
 245 250

<210> 8049
 <211> 568
 <212> PRT
 <213> B.fragilis

<400> 8049

Glu Met Ala Asn Phe Tyr Leu Asp Thr Pro Glu Leu Lys His His Leu
 1 5 10 15
 Asn His Pro Leu Met Lys Arg Ile Val Glu Leu Lys Glu Arg Asn Tyr
 20 25 30
 Ala Asp Lys Asp Lys Phe Asp Tyr Ala Pro Val Asp Phe Glu Asp Ala
 35 40 45
 Met Asp Ser Tyr Asp Lys Val Leu Glu Ile Val Gly Glu Ile Cys Gly
 50 55 60
 Asp Ile Ile Ala Pro Asn Ala Glu Gly Val Asp His Glu Gly Pro Val
 65 70 75 80
 Cys Ala Asp Asn Arg Val Thr Tyr Ala Ser Gly Thr Thr Arg Asn Leu
 85 90 95
 Asp Ala Cys Arg Lys Ala Gly Leu Met Gly Met Ala Met Pro Arg Arg
 100 105 110
 Phe Gly Gly Leu Asn Phe Pro Ile Thr Pro Tyr Ile Met Ala Ala Asp
 115 120 125
 Ile Val Ser Arg Ser Asp Ala Gly Phe Glu Asn Leu Trp Gly Leu Gln
 130 135 140
 Asp Cys Ala Glu Thr Ile Tyr Glu Phe Ala Asn Glu Glu Gln Lys Gln
 145 150 155 160
 Arg Tyr Ile Thr Arg Val Cys Gln Gly Glu Thr Met Ser Met Asp Leu
 165 170 175
 Thr Glu Pro Asp Ala Gly Ser Asp Leu Gln Ser Val Met Leu Lys Ala
 180 185 190
 Thr Tyr Ser Glu Lys Asp Gln Cys Trp Tyr Leu Asn Gly Val Lys Arg
 195 200 205
 Phe Ile Thr Asn Gly Asp Ala Asp Ile His Leu Val Leu Ala Arg Ser
 210 215 220
 Glu Glu Gly Thr His Asp Gly Arg Gly Leu Ser Met Phe Ile Tyr Asp
 225 230 235 240
 Lys Arg Asn Gly Gly Val Asn Val Arg Arg Ile Glu Asn Lys Met Gly
 245 250 255
 Ile Lys Gly Ser Pro Thr Cys Glu Leu Val Tyr Lys Asn Ala Lys Ala
 260 265 270
 Glu Leu Cys Gly Asp Arg Lys Leu Gly Leu Ile Lys Tyr Val Met Ala
 275 280 285
 Leu Met Asn Gly Ala Arg Leu Gly Ile Ala Ala Gln Ser Val Gly Leu
 290 295 300
 Ser Gln Ala Ala Tyr Asn Glu Ala Leu Ala Tyr Ala Lys Asp Arg Lys
 305 310 315 320
 Gln Phe Gly Lys Ala Ile Ile Glu Phe Pro Ala Val Ala Glu Ile Leu
 325 330 335
 Ser Leu Met Lys Ala Lys Leu Asp Ala Ser Arg Ser Leu Leu Tyr Glu
 340 345 350
 Thr Ala Arg Phe Val Asp Val Tyr Lys Ala Leu Asp Asp Ile Ala Lys
 355 360 365

Glu Arg Lys Leu Thr Pro Glu Glu Arg Ala Glu Gln Lys Thr Phe Ala
 370 375 380
 Lys Leu Ala Asp Ala Phe Thr Pro Leu Gly Lys Gly Met Gly Ser Glu
 385 390 395 400
 Phe Ala Asn Gln Asn Ala Tyr Asp Cys Ile Gln Ile His Gly Gly Ser
 405 410 415
 Gly Phe Met Lys Asp Tyr Ala Cys Glu Arg Ile Tyr Arg Asp Ser Arg
 420 425 430
 Ile Thr Ser Ile Tyr Glu Gly Thr Thr Gln Leu Gln Val Ala Ala
 435 440 445
 Ile Arg Tyr Val Thr Thr Gly Ala Tyr Leu Ala Arg Ile Gln Glu Tyr
 450 455 460
 Glu Asn Met Pro Val Ala Pro Glu Leu Glu Gly Leu Gln Asn Arg Leu
 465 470 475 480
 Lys Ser Met Ala Ser Lys Tyr Ala Ala Cys Val Thr Gln Ile Thr Glu
 485 490 495
 Ala Lys Asp Gln Glu Leu Leu Asp Phe Cys Ala Arg Arg Leu Val Glu
 500 505 510
 Met Ala Ala His Ile Ile Met Gly His Leu Met Val Gln Asp Ala Ser
 515 520 525
 Lys Ser Asp Leu Phe Ser Glu Ser Ala Gln Val Tyr Val Arg Tyr Ala
 530 535 540
 Glu Ala Glu Val Glu Lys His Ile Asn Phe Ile Arg Lys Phe Asp Lys
 545 550 555 560
 Asp Asp Leu Ala Tyr Tyr Arg Lys
 565

<210> 8050
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8050
 Tyr Ile Ile Lys Ser Ile Ser Leu Lys Ser Ile Ser Leu Val Ile Val
 1 5 10 15
 Leu Pro Gly Ile Ile Cys Phe Met Ser Phe Asp Leu Tyr Leu Met Cys
 20 25 30
 Cys Asn Ile Met Ile Tyr Gly Phe Lys Ser Asn Val Asn Gln Gly Leu
 35 40 45
 Leu Arg Lys Arg Asp Val Ile Gly Leu Leu Lys Asn Glu Glu Ile Ile
 50 55 60
 Ser Asn Lys Ile Phe Asn Ile Phe Ile Asn Glu Glu Leu Asp Leu Leu
 65 70 75 80
 Tyr

<210> 8051
 <211> 317
 <212> PRT
 <213> B.fragilis

<400> 8051
 Ile Tyr Lys Asn Met Ala Tyr Ile Asp Tyr Tyr Lys Ile Leu Gly Val
 1 5 10 15
 Asp Lys Asn Ala Ser Gln Asp Asp Ile Lys Lys Ala Phe Arg Lys Leu
 20 25 30
 Ala Arg Lys Tyr His Pro Asp Leu Asn Pro Asn Asp Pro Ser Ala Lys
 35 40 45
 Asp Lys Phe Gln Glu Ile Asn Glu Ala Asn Glu Val Leu Ser Asp Pro

50 55 60
 Glu Lys Arg Lys Lys Tyr Asp Glu Tyr Gly Glu His Trp Lys His Ala
 65 70 75 80
 Asp Glu Phe Glu Ala Gln Lys Lys Ala Arg Gln His Thr Gly Gly Gly
 85 90 95
 Gly Gly Gly Phe Ser Gly Phe Gly Gly Asp Gly Gly Ser Tyr Trp Tyr
 100 105 110
 Ser Ser Asp Gly Glu Gly Phe Ser Gly Gly Asp Ala Gly Gly Phe Ser
 115 120 125
 Asp Phe Phe Glu Ser Met Phe Gly His Arg Gly Gly Gly Arg Gly
 130 135 140
 Asn Ala Gly Phe Arg Gly Gln Asp Phe Asn Ala Glu Leu His Leu Ser
 145 150 155 160
 Leu Arg Asp Ala Ala Arg Thr His Lys Gln Val Leu Asn Val Asn Gly
 165 170 175
 Lys Gln Val Arg Ile Thr Ile Pro Ala Gly Val Ala Asp Gly Gln Val
 180 185 190
 Ile Lys Leu Lys Gly Tyr Gly Gly Glu Gly Ile Asn Gly Gly Pro Ala
 195 200 205
 Gly Asp Leu Tyr Ile Thr Phe Lys Ile Ala Glu Asp Ser Val Phe Lys
 210 215 220
 Arg Leu Gly Asp Asp Leu Tyr Val Asp Val Glu Met Asp Leu Tyr Thr
 225 230 235 240
 Ala Val Leu Gly Gly Glu Lys Val Ile Asp Thr Leu Glu Gly Lys Val
 245 250 255
 Lys Leu Lys Ile Lys Pro Glu Thr Gln Asn Gly Thr Lys Val Arg Leu
 260 265 270
 Lys Gly Lys Gly Phe Pro Val Tyr Lys Lys Glu Gly Gln Phe Gly Asp
 275 280 285
 Leu Ile Ile Thr Tyr Ser Val Lys Ile Pro Thr Asn Leu Thr Asp Arg
 290 295 300
 Gln Lys Glu Leu Phe Arg Glu Leu Gln Gln Ser Met Asn
 305 310 315

<210> 8052

<211> 344

<212> PRT

<213> B.fragilis

<400> 8052

Glu Glu Arg Lys Asp Met Asn Asn Leu Phe Val Tyr Cys Glu Ile Glu
 1 5 10 15
 Asp Gly Ile Val Ala Asp Val Ser Leu Glu Leu Leu Thr Lys Gly Arg
 20 25 30
 Ser Leu Ala Asn Gln Leu Gly Cys Gln Leu Glu Ala Val Val Ala Gly
 35 40 45
 Thr Gly Leu Lys Asp Ile Glu Lys Gln Ile Leu Pro Tyr Gly Val Asp
 50 55 60
 Lys Leu His Val Phe Asp Gly Glu Gly Leu Tyr Pro Tyr Thr Ser Leu
 65 70 75 80
 Pro His Ile Ser Ile Leu Val Asn Leu Phe Lys Glu Glu Gln Pro Gln
 85 90 95
 Ile Cys Leu Met Gly Ala Thr Val Ile Gly Arg Asp Leu Gly Pro Arg
 100 105 110
 Val Ser Ser Ala Leu Thr Ser Gly Leu Thr Ala Asp Cys Thr Ser Leu
 115 120 125
 Glu Ile Gly Asp His Glu Asp Lys Lys Glu Gly Lys Val Tyr Lys Asn
 130 135 140
 Leu Leu Tyr Gln Ile Arg Pro Ala Phe Gly Gly Asn Ile Val Ala Thr

145		150		155		160
Ile Val Asn Pro Glu	His Arg Pro Gln Met Ala Thr Val Arg Glu Gly					
	165		170		175	
Val Met Lys Lys Ala Ile Leu Ala Ala Asp Tyr Lys Gly Glu Val Ile						
	180		185		190	
His His Asp Val Lys Lys Tyr Val Ala Asp Thr Asp Tyr Val Val Lys						
	195		200		205	
Val Ile Glu Arg His Val Glu Lys Ala Lys Asn Asn Leu Lys Gly Ser						
	210		215		220	
Pro Ile Ile Ile Ala Gly Gly Tyr Gly Val Gly Ser Lys Glu Asn Phe						
	225		230		235	
Asn Leu Leu Phe Asp Leu Ala Lys Val Leu Asn Ala Glu Val Gly Ala						
	245		250		255	
Ser Arg Ala Ala Val Asp Ala Gly Phe Val Glu His Asp Arg Gln Ile						
	260		265		270	
Gly Gln Thr Gly Val Thr Val Arg Pro Lys Leu Tyr Ile Ala Cys Gly						
	275		280		285	
Ile Ser Gly Gln Ile Gln His Ile Ala Gly Met Gln Glu Ser Gly Ile						
	290		295		300	
Ile Ile Ser Ile Asn Asn Asp Pro Ser Ala Pro Ile Asn Thr Ile Ala						
	305		310		315	
Asp Tyr Val Ile Asn Gly Thr Ile Glu Glu Val Val Pro Lys Met Ile						
	325		330		335	
Lys Tyr Tyr Lys Gln Asn Ser Lys						
	340					

<210> 8053

<211> 628

<212> PRT

<213> B.fragilis

<400> 8053

His Ile Met Lys Ile Asn Lys Leu Leu Tyr Ala Gly Ala Ala Leu Thr						
1	5		10		15	
Leu Leu Gly Ala Cys Ala Pro Ala Val Lys Ala Pro Glu Ala Ile Leu						
	20		25		30	
Pro Val Pro Glu Glu Lys Gln Val Asp Trp Gln Lys Met Glu Thr Tyr						
	35		40		45	
Ala Phe Val His Phe Gly Leu Asn Thr Phe Asn Asp Arg Glu Trp Gly						
	50		55		60	
Tyr Gly Asp Ser Glu Pro Lys Thr Phe Asn Pro Thr Lys Leu Asp Cys						
	65		70		75	
Glu Gln Trp Val Lys Thr Phe Val Glu Ser Gly Met Lys Gly Val Ile						
	85		90		95	
Leu Thr Ala Lys His His Asp Gly Phe Cys Leu Trp Pro Thr Gln Leu						
	100		105		110	
Thr Glu Tyr Cys Ile Arg Asn Thr Pro Tyr Lys Asp Gly Lys Gly Asp						
	115		120		125	
Ile Val Gly Glu Leu Ala Ala Cys Lys Lys Tyr Gly Ile Lys Phe						
	130		135		140	
Ala Val Tyr Leu Ser Pro Trp Asp Arg His Gln Ala Asn Tyr Gly Thr						
	145		150		155	
Pro Glu Tyr Val Asp Tyr Phe His Lys Gln Leu Thr Glu Leu Met Thr						
	165		170		175	
Asn Tyr Gly Glu Val Phe Glu Val Trp Phe Asp Gly Ala Asn Gly Gly						
	180		185		190	
Asp Gly Trp Tyr Gly Gly Ala Lys Asp Ser Arg Thr Ile Asp Arg Lys						
	195		200		205	
Thr Tyr Tyr Asn Tyr Pro Arg Ile Tyr Glu Ile Leu Asp Lys Leu Gln						

210	215	220
Pro Gln Ala Ile Val	Phe Ser Asp Gly Gly	Pro Gly Cys Arg Trp Val
225	230	235
Gly Asn Glu Asn Gly	Phe Ala Gly Ala Thr	Asn Trp Ser Phe Leu Arg
245	250	255
Ala Gly Glu Val Tyr	Pro Gly Tyr Pro Lys Tyr	Arg Glu Leu Gln Tyr
260	265	270
Gly His Ala Asp Gly	Asn Gln Trp Val Pro	Ala Glu Cys Asp Val Ser
275	280	285
Ile Arg Pro Gly Trp	Phe Tyr His Pro Glu Glu	Asp Asp Arg Val Lys
290	295	300
Thr Val Glu Gln Leu	Thr Asp Leu Tyr Tyr	Arg Ser Val Gly His Asn
305	310	315
Ala Thr Leu Leu Leu	Asn Phe Pro Val Asp	Arg Asp Gly Leu Ile His
325	330	335
Pro Ile Asp Ser Ala	Asn Ala Val Asn Phe	His Lys Asn Val Gln Lys
340	345	350
Gln Leu Ala His Asn	Leu Phe Ala Gly Ile	Arg Pro Lys Ala Ser Asp
355	360	365
Glu Arg Gly Gly Gln	Phe Ser Ala Lys Ala	Ala Thr Asp Glu Ser Trp
370	375	380
Asp Thr Tyr Trp Ala	Thr Asn Asp Gly Val	Thr Ala Ala Asp Ile Glu
385	390	395
Phe Asp Phe Pro Lys	Thr Glu Lys Val Asn	Arg Met Met Ile Gln Glu
405	410	415
Tyr Ile Pro Leu Gly	Gln Arg Val Lys Ser	Phe Ile Val Glu Tyr Asp
420	425	430
Lys Asp Gly Lys Trp	Leu Pro Val Lys Leu	Asn Glu Glu Thr Thr Thr
435	440	445
Val Gly Tyr Lys Arg	Leu Leu Arg Phe Glu	Thr Val Ser Thr Asp Lys
450	455	460
Leu Arg Ile Arg Phe	Thr Asp Ala Arg Ala	Cys Leu Cys Ile Asn Asn
465	470	475
Ile Glu Ala Tyr Tyr	Ala Gly Glu Thr Ala	Asp Thr Phe Thr Val Glu
485	490	495
Ala Lys Glu Leu Lys	Ser Tyr Pro Phe Thr	Leu Val Gly Val Pro Glu
500	505	510
Glu Glu Thr Lys Lys	Cys Met Asp Lys Asp	Lys Asn Thr Thr Ala Phe
515	520	525
Val Glu Gly Asp Ala	Leu Val Ile Asp Leu	Gly Glu Arg Thr Ile
530	535	540
Thr Ser Phe His Tyr	Leu Pro Asp Gln Ser	Glu Tyr Asn Lys Gly Leu
545	550	555
Ile Ser Ser Tyr Glu	Leu Ser Val Gly Thr	Glu Ala Asn Ala Val Asn
565	570	575
Arg Ile Val Ala Gln	Gly Glu Phe Ser Asn	Ile Lys Asn Asn Pro Ile
580	585	590
Leu Gln Ser Val Tyr	Phe Thr Pro Val Lys	Ala Arg Tyr Leu Ser Leu
595	600	605
Lys Pro Thr Lys Met	Val Thr Glu Gly Glu	Thr Met Gly Phe Ala Glu
610	615	620
Ile Gly Ile Gln		
625		

<210> 8054

<211> 70

<212> PRT

<213> B.fragilis

<400> 8054

Gly Tyr Thr Leu Thr Gly Asn Arg Asn Pro Cys Ile Ala Leu Tyr Asn
 1 5 10 15
 Leu Phe Ile Cys Asp Lys Leu Pro Ala His Ala Gln Lys Glu Leu His
 20 25 30
 Gln Pro Asn Ile Arg Ser Leu Thr Ala Asp Thr Asn Leu Val Asn Ile
 35 40 45
 Phe Cys Lys Ser Phe Leu Ile Val Ile Ser His Arg Tyr Ile Tyr Ile
 50 55 60
 Leu Ile Glu Asn Asp Ala
 65 70

<210> 8055

<211> 62

<212> PRT

<213> B.fragilis

<400> 8055

Val Lys His Cys Lys Thr Lys Thr Thr Thr Gly Leu Lys Val Ser Phe
 1 5 10 15
 Thr Thr Asp Glu Gln Ile Tyr Lys Asp Ile His Leu Gln Ala Thr Glu
 20 25 30
 Ile Pro Val Leu Pro Tyr Thr Ile Cys Ser Ser Val Ile Asn Phe Arg
 35 40 45
 His Met Leu Lys Lys Ser Phe Thr Asn Leu Thr Ser Gly His
 50 55 60

<210> 8056

<211> 435

<212> PRT

<213> B.fragilis

<400> 8056

Lys Gln Tyr Cys Asp Asn Glu Asn Lys Thr Leu Lys Tyr Ser Ser Lys
 1 5 10 15
 Asp Arg Arg Ser Phe Pro Tyr Leu Gly Ile Phe Ser Tyr Leu Cys Arg
 20 25 30
 Ile Asn Ile Asn Lys Asn Asp Ile Met Lys Lys Thr Ile Leu Leu
 35 40 45
 Ala Ala Leu Gly Leu Ile Ser Leu Ser Ala Leu Gly Gln Asp Lys Pro
 50 55 60
 Gln Glu Glu Gly Phe Val Phe Thr Thr Val Lys Glu Asn Pro Ile Thr
 65 70 75 80
 Ser Ile Lys Asn Gln Asn Arg Ser Ser Thr Cys Trp Ser Phe Ser Ser
 85 90 95
 Leu Gly Phe Leu Glu Ser Glu Leu Leu Arg Thr Gly Lys Gly Glu Tyr
 100 105 110
 Asp Leu Ser Glu Met Phe Val Val His His Thr Met Val Asp Arg Ala
 115 120 125
 Val Asn Tyr Val Arg Tyr His Gly Asp Ser Ser Phe Ser Pro Gly Gly
 130 135 140
 Ser Phe Tyr Asp Ile Met Phe Cys Met Lys Asn Tyr Gly Leu Val Pro
 145 150 155 160
 Gln Asp Ala Met Pro Gly Ile Met Tyr Gly Asp Ser Leu Pro Val His
 165 170 175
 Asn Glu Leu Asp Ala Thr Ala Gly Ala Tyr Val Asn Ala Ile Ala Lys
 180 185 190
 Gly Asn Leu Lys Lys Leu Thr Pro Val Trp Lys Lys Gly Leu Cys Ala
 195 200 205

Ile Tyr Asp Thr Tyr Leu Gly Gln Cys Pro Glu Lys Phe Thr Tyr Lys
 210 215 220
 Gly Lys Glu Tyr Thr Pro Met Thr Phe Ala Gln Ser Leu Gly Leu Asn
 225 230 235 240
 Pro Asp Asp Tyr Val Ser Leu Thr Ser Tyr Thr His His Pro Phe Tyr
 245 250 255
 Ser Gln Phe Ala Ile Glu Ile Gln Asp Asn Trp Arg Asn Gly Leu Ser
 260 265 270
 Tyr Asn Leu Pro Leu Asp Glu Phe Met Ala Val Met Asp Asn Ala Val
 275 280 285
 Lys Asn Gly Tyr Thr Phe Ala Trp Gly Ser Asp Val Ser Glu Glu Gly
 290 295 300
 Phe Thr Arg Asp Gly Ile Ala Val Val Pro Asp Ala Ala Lys Gly Ala
 305 310 315 320
 Glu Leu Thr Gly Ser Asp Met Ala Arg Trp Thr Gly Met Thr Ala Ala
 325 330 335
 Asp Lys Arg Lys Glu Leu Thr Ser Lys Pro Leu Pro Glu Met Lys Ile
 340 345 350
 Thr Gln Glu Met Arg Gln Thr Ala Phe Asp Asn Trp Glu Thr Thr Asp
 355 360 365
 Asp His Gly Met Ile Ile Tyr Gly Ile Ala Lys Asp Gln Asn Gly Lys
 370 375 380
 Glu Tyr Phe Met Val Lys Asn Ser Trp Gly Thr Asn Asn Lys Tyr Lys
 385 390 395 400
 Gly Thr Trp Tyr Ala Ser Lys Ala Phe Val Ala Tyr Lys Thr Met Asn
 405 410 415
 Ile Leu Val His Lys Asp Ala Leu Pro Lys Asp Ile Ala Lys Lys Leu
 420 425 430
 Gly Ile Lys
 435

<210> 8057
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8057
 Ala Gly Lys Leu Asn Ala Pro Ala Ser Lys Ser Arg Val Thr Cys Leu
 1 5 10 15
 Val Ile Phe Asn Ile Thr Ile Leu Phe Trp Val Asn Asn Lys Gly Phe
 20 25 30
 Val Trp Phe Phe Tyr Ile Leu Pro Phe Leu Leu Ile Ile Leu Ser Tyr
 35 40 45
 Phe Phe Lys Asn Gly Leu Val Leu Ala Glu Leu Gly Glu Met
 50 55 60

<210> 8058
 <211> 250
 <212> PRT
 <213> B.fragilis

<400> 8058
 Lys Pro Leu Arg Thr Leu Val Phe Leu Phe Gly Val Ser Gly Thr Ile
 1 5 10 15
 Asn Lys Ile Tyr Val Lys Asp Gly Ala Gln Val Arg Ala Gly Gln Leu
 20 25 30
 Leu Ala Glu Leu Asp Pro Thr Asp Tyr Gln Val Gln Leu Asp Ala Thr
 35 40 45
 Glu Ala Glu Tyr Arg Gln Val Lys Ala Glu Ala Glu Arg Val Met Ala

50		55		60
Leu Tyr Lys Glu Asn Gly Thr Thr Pro Asn Ala Asn Asp Lys Ala Val				
65		70		75
Tyr Gly Leu Lys Gln Ile Thr Ala Lys Tyr Lys His His Gln Asp Gln				
	85		90	95
Leu Ala Tyr Thr Arg Leu Tyr Ala Pro Phe Ser Gly Tyr Val Gln Lys				
	100		105	110
Arg Leu Phe Glu Ala His Glu Thr Ile Gly Ala Gly Met Pro Val Ile				
	115		120	125
Ser Met Val Ser Ala Gly Ala Pro Glu Val Glu Ile Asn Leu Pro Ala				
	130		135	140
Ala Glu Tyr Ile Arg Arg Asn Arg Phe Asn Arg Tyr His Cys Thr Phe				
	145		150	155
Asp Ile Tyr Pro Gly Glu Thr Tyr Pro Leu Gln Leu Ile Ser Val Thr				
	165		170	175
Pro Lys Ala Asn Ala Asn Gln Leu Tyr Thr Met Arg Leu Gln Leu Ile				
	180		185	190
Pro Gly Lys Gln Ala Val Pro Ser Pro Gly Met Asn Ala Met Val Thr				
	195		200	205
Ile Phe Cys Asp Thr Asp Arg Ser Gly Thr Leu Ser Val Pro Thr Ser				
	210		215	220
Ala Ile Leu Gln Lys Asp Gly Lys Ser Tyr Val Phe Ile Tyr Asn Glu				
	225		230	235
Pro His Arg Arg Arg Ala Arg Thr Asn Leu				
	245		250	

<210> 8059

<211> 323

<212> PRT

<213> B.fragilis

<400> 8059

Ile Cys Arg Leu Ile Val Asn Arg Ile Val Asn Ser Lys Asn Leu Thr				
1	5	10	15	
Thr Asp Tyr Trp Leu Leu Thr Cys Arg Asn Thr Asn Thr Lys Ile Asn				
	20	25	30	
Asn Met Ser Leu Lys Ile Val Val Leu Ala Lys Gln Val Pro Asp Thr				
	35	40	45	
Arg Asn Val Gly Lys Asp Ala Met Lys Ala Asp Gly Thr Ile Asn Arg				
	50	55	60	
Ala Ala Leu Pro Ala Ile Phe Asn Pro Glu Asp Leu Asn Ala Leu Glu				
	65	70	75	80
Gln Ala Leu Arg Leu Lys Asp Ala His Pro Gly Ser Thr Val Thr Ile				
	85	90	95	
Leu Thr Met Gly Pro Gly Arg Ala Ala Asp Ile Ile Arg Glu Gly Leu				
	100	105	110	
Phe Arg Gly Ala Asp Asn Gly Tyr Leu Leu Thr Asp Arg Ala Phe Ala				
	115	120	125	
Gly Ala Asp Thr Leu Ala Thr Ser Tyr Ala Leu Ala Thr Ala Ile Lys				
	130	135	140	
Lys Ile Gly Glu Tyr Asp Ile Ile Ile Gly Gly Arg Gln Ala Ile Asp				
	145	150	155	160
Gly Asp Thr Ala Gln Val Gly Pro Gln Val Ala Glu Lys Leu Gly Leu				
	165	170	175	
Thr Gln Ile Thr Tyr Ala Glu Glu Ile Leu Lys Val Gly Asp Gly Ser				
	180	185	190	
Ile Thr Val Lys Arg His Ile Asp Gly Gly Val Glu Thr Val Glu Gly				
	195	200	205	
Pro Leu Pro Ile Val Ile Thr Val Asn Gly Ser Ala Ala Pro Cys Arg				

210	215	220
Pro Arg Asn Ala Lys	Leu Val Gln Lys Tyr Lys	His Ala Lys Thr Ile
225	230	235
Thr Glu Lys Gln Gln Gly	Asn Leu Asp Tyr Thr	Asp Leu Tyr Asp Thr
	245	250
Arg Asp Tyr Leu Asn Leu Val Glu Trp	Ser Val Ala Asp	Val Asn Gly
	260	265
Asp Leu Lys Gln Cys Gly Leu Ser Gly	Ser Pro Thr Lys	Val Lys Ala
	275	280
Ile Gln Asn Ile Val Phe Gln Ala Lys Glu Ser	Lys Thr Ile Ser Gly	
	290	295
Ser Asp Arg Glu Val Glu Glu Leu Ile Val Glu	Leu Leu Glu Asn His	
305	310	315
Thr Ile Gly		320

<210> 8060
 <211> 1348
 <212> PRT
 <213> B.fragilis

<400> 8060

Ser Ile Lys Arg Lys Thr Ile Met Arg Lys Ile Thr Leu Gly Leu Ile	
1	5
Leu Cys Ser Met Val Thr Leu Cys Phe Ala Gly Gln Arg Pro Leu Glu	10
	20
Gly Phe Lys Tyr Ala Ser Glu Lys Ala Pro Val Gly Asn Glu Trp Glu	25
	35
Ser Pro Glu Asn Ile Ala Leu Asn Lys Glu Gln Pro Arg Ala Trp Phe	40
	50
Phe Ser Phe Gln Asp Val Glu Ser Ala Arg Lys Val Leu Pro Glu Asn	55
65	70
Ser Lys Tyr Trp Leu Ser Leu Asn Gly Asp Trp Lys Phe Asn Trp Ala	75
	85
Pro Asp Pro Asp Ser Arg Pro Lys Asp Phe Tyr Gln Thr Thr Phe Asp	90
	100
Val Ser Gly Trp Asp Asn Ile Pro Val Pro Ser Ser Trp Asn Ile Tyr	105
	115
Gly Ile Gln Lys Asp Gly Ser Leu Lys Tyr Gly Val Pro Ile Tyr Val	120
	130
Asn Gln Pro Val Ile Phe Met His Lys Val Lys Val Asp Asp Trp Arg	135
145	150
Gly Gly Val Met Arg Thr Pro Pro Thr Asn Trp Thr Thr Tyr Lys Tyr	155
	165
Arg Asn Glu Val Gly Ser Tyr Arg Arg Asp Phe Asp Ile Pro Gln Asp	170
	180
Trp Asp Gly Arg Glu Val Phe Ile Asn Phe Asp Gly Val Asp Ser Phe	185
	195
Phe Tyr Leu Trp Ile Asn Gly Gln Tyr Val Gly Phe Ser Lys Asn Ser	200
	210
Arg Asn Thr Ala Ser Phe Asn Ile Thr Pro Tyr Leu Gln Lys Gly Lys	215
225	230
Asn Thr Val Ala Ala Glu Val Tyr Arg Ser Ser Asp Gly Ser Phe Leu	235
	245
Glu Ala Gln Asp Met Phe Arg Leu Pro Gly Ile Phe Arg Thr Val Ala	250
	260
Leu Tyr Ser Thr Pro Lys Val Gln Val Arg Asp Leu Val Val Ile Pro	265
	275
Asp Leu Asp Glu Thr Tyr Thr Asn Gly Ser Leu Ala Ile Ser Ala Asp	280
	285

290	Ile Arg Asn Phe Gly Lys	295	Lys Ala Ala Lys Gly Tyr	300	Gln Met Ala Tyr
305	Thr Leu Tyr Ala Asn Lys	310	Leu Tyr Ser Asp Glu Asn	315	Thr Pro Val Ala
		325		330	
	Asn Ala Val Ala Ser Ala	340	Thr Val Asn Leu Val Asn	345	Pro Asn Glu Thr
					350
	Val Glu Ala Glu Lys Ala	355	Ile Met Asn Val Gln Ser	360	Pro Asn Lys Trp
					365
	Ser Ala Glu Phe Pro His	370	Leu Tyr Thr Leu Val Ala	375	Glu Leu Lys Asp
					380
	Lys Lys Gly Lys Thr Ile	385	Glu Thr Val Ser Thr Thr	390	Val Gly Phe Arg
					395
	Lys Val Glu Ile Lys Asp	405	Thr Pro Ala Ser Ala Asp	410	Glu Phe Gly Leu
					415
	Ala Gly Arg Tyr Tyr Tyr	420	Val Asn Gly Lys Thr Val	425	Lys Leu Lys Gly
					430
	Val Asn Arg His Glu Ser	435	Asn Pro Ala Val Gly His	440	Ala Ile Thr Arg
					445
	Glu Met Met Glu Lys Glu	450	Val Met Leu Met Lys Arg	455	Ala Asn Ile Asn
					460
	His Val Arg Asn Ser His	465	Tyr Pro Asp Asp Pro Tyr	470	Trp Tyr Tyr Leu
					475
	Cys Asn Lys Tyr Gly Leu	485	Tyr Leu Glu Asp Glu Ala	490	Asn Ile Glu Ser
					495
	His Glu Tyr Tyr Tyr Gly	500	Ala Ala Ser Leu Ser His	505	Pro Val Glu Trp
					510
	Lys Asn Ala His Val Ala	515	Arg Val Met Glu Met Val	520	His Ala Asn Val
					525
	Asn Asn Pro Ser Ile Val	530	Ile Trp Ser Leu Gly Asn	535	Glu Ala Gly Pro
					540
	Gly Lys Asn Phe Val Ala	545	Ala Tyr Asp Ala Leu Lys	550	Ala Phe Asp Leu
					555
	Ser Arg Pro Val Gln Tyr	565	Glu Arg Asn Asn Asp Ile	570	Val Asp Met Gly
					575
	Ser Asn Gln Tyr Pro Ser	580	Ile Gly Trp Met Arg Gly	585	Ala Val Lys Gly
					590
	Asn Tyr Asp Ile Lys Tyr	595	Pro Phe His Val Ser Glu	600	Tyr Ala His Ser
					605
	Met Gly Asn Ala Cys Gly	610	Asn Leu Val Asp Tyr Trp	615	Glu Ala Ile Glu
					620
	Ser Thr Asn Phe Phe Cys	625	Gly Gly Ala Ile Trp Asp	630	Trp Val Asp Gln
					635
	Ser Met Tyr Asn Tyr Asp	645	Lys Lys Thr Gly Glu Arg	650	Tyr Leu Ala Tyr
					655
	Gly Gly Asp Phe Gly Asp	660	Thr Pro Asn Asp Gly Gln	665	Phe Val Met Asn
					670
	Gly Ile Val Phe Gly Asp	675	Leu Glu Pro Lys Pro Gln	680	Tyr Tyr Glu Val
					685
	Lys Lys Val Tyr Gln His	690	Ile Asp Val Lys Ala Ile	695	Asp Val Glu Lys
					700
	Gly Arg Phe Glu Val Phe	705	Asn Lys Tyr Tyr Phe Lys	710	Asn Leu Ser Asp
					715
	Tyr Asp Val Lys Trp Ser	725	Leu Tyr Glu Asn Gly Lys	730	Glu Ala Gln Ser
					735
	Gly Leu Leu Ser Ile Gly	740	Glu Val Ala Pro Arg Thr	745	Arg Thr Gln Ile
					750
	Thr Val Pro Tyr Gln Phe	755	Ser Lys Leu Lys Ala Asp	760	Ser Glu Tyr Phe
					765

Val Lys Ile Gln Phe Leu Leu Lys Asp Asn Met Pro Trp Ala Asp Lys
 770 775 780
 Asn Phe Ala Gln Ala Glu Glu Gln Ile Leu Val Lys Glu Ala Thr Ala
 785 790 795 800
 Arg Pro Ser Ile Ala Thr Val Ala Ala Glu Gly Asp Lys Pro Glu Val
 805 810 815
 Met Met Thr Lys Ala Ser Asp Ile Ile Thr Ile Lys Gly Asn Gly Tyr
 820 825 830
 Thr Ala Gln Phe Asp Ile Lys Thr Gly Thr Ile Tyr Ser Leu Thr Tyr
 835 840 845
 Gly Asn Glu Lys Val Ile Thr Asp Gly Asn Gly Pro Lys Leu Asp Ala
 850 855 860
 Leu Arg Ala Phe Thr Asn Asn Asp Asn Trp Phe Tyr Ser Gln Trp Phe
 865 870 875 880
 Asp Asn Gly Leu His Asn Leu Lys His Ser Ala Thr Gly Phe Asn Met
 885 890 895
 Thr Thr Lys Glu Asp Gly Thr Val Val Leu Ser Phe Thr Val Gln Ser
 900 905 910
 Gln Ala Pro Asn Ala Ala Lys Ile Leu Gly Gly Thr Ser Ser Gly Lys
 915 920 925
 Asn Lys Ile Glu Glu Leu Thr Asp Lys Lys Phe Gly Ser Ser Asp Phe
 930 935 940
 Lys Phe Thr Thr Asn Gln Val Trp Thr Val Tyr Lys Asp Gly Ser Ile
 945 950 955 960
 Glu Leu Glu Ala Ser Ile Thr Ser Asn Gln Pro Ser Leu Val Leu Pro
 965 970 975
 Arg Leu Gly Tyr Met Val Arg Val Pro Gln Gln Tyr Ala Asn Phe Thr
 980 985 990
 Tyr Tyr Gly Arg Gly Pro Ile Asp Asn Tyr Ala Asp Arg Lys Val Gly
 995 1000 1005
 Gln Phe Ile Glu Gln His Lys Asn Thr Val Ala Gly Glu Phe Val Asn
 1010 1015 1020
 Phe Pro Lys Pro Gln Asp Met Gly Asn His Glu Asp Val Arg Trp Cys
 1025 1030 1035 1040
 Ala Leu Thr Asn Asn Ala Gly Asn Gly Ala Val Phe Ile Ala Thr Asp
 1045 1050 1055
 Arg Leu Ser Thr Ser Ala Leu Pro Tyr Ser Ala Leu Asp Leu Ile Leu
 1060 1065 1070
 Ala Ser His Pro Tyr Gln Leu Pro Lys Ala Gly Asp Thr Tyr Leu His
 1075 1080 1085
 Leu Asp Ala Ala Val Thr Gly Leu Gly Gly Asn Ser Cys Gly Gln Gly
 1090 1095 1100
 Gly Pro Leu Glu Gln Asp Arg Val Phe Ala Ser His His Asn Thr Gly
 1105 1110 1115 1120
 Phe Ile Ile Arg Pro Ala Gly Lys Asp Leu Thr Val Thr Ala Asn Val
 1125 1130 1135
 Ala Pro Ala Gly Glu Met Pro Leu Ser Ile Thr Arg Asn Arg Ala Gly
 1140 1145 1150
 Val Val Ser Val Ser Ser Gln Lys Lys Asp Ala Val Ile Leu Tyr Thr
 1155 1160 1165
 Val Asp Lys Ser Lys Ser Lys Thr Tyr Thr Glu Pro Ile Ala Leu Arg
 1170 1175 1180
 Asn Gly Gly Thr Val Thr Ala Trp Phe Lys Asp Ala Pro Phe Ile Lys
 1185 1190 1195 1200
 Ala Ser Met Thr Phe Asp Lys Ile Glu Ser Ile Gln Thr Glu Val Ile
 1205 1210 1215
 Tyr Ala Ser Ser Glu Glu Ser Asp Gly Gly Glu Ala Lys Asn Leu Thr
 1220 1225 1230
 Asp Gly Asp Pro Asn Thr Ile Trp His Thr Met Phe Ser Val Thr Val

1235	1240	1245
Ala Lys His Pro His Trp	Val Asp Leu Asp	Ala Gly Glu Val Lys Thr
1250	1255	1260
Ile Lys Gly Phe Thr Tyr	Leu Pro Arg Gln Asp	Ser Ser Asn Gly Asn
1265	1270	1275
Val Lys Asp Tyr Thr Ile	His Val Ser Met Asp	Gly Lys Glu Trp Gly
	1285	1290
Glu Pro Ile Leu Lys Gly	Thr Phe Ala Arg Asp	Leu Lys Glu Lys Lys
	1300	1305
Val Met Phe Asp Lys Pro	Val Lys Ala Arg Tyr	Ile Arg Phe Thr Ala
	1315	1320
Leu Ser Glu Gln Arg Gly	Gln Asp Tyr Ala Ser	Gly Ala Glu Leu Thr
	1330	1335
Ile Leu Ala Glu		1340
1345		

<210> 8061
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 8061
Glu Val Phe Gly Met Phe Met Val Trp Gly Phe Arg Gln Arg Ile Phe
1 5 10 15
Asp Ser Pro Leu Ser Ile Arg Lys Gly Ile Tyr Tyr Pro Leu Ser Lys
20 25 30
Glu Ala Gly Phe Lys Thr Ser Cys Leu Ser Pro Asn Lys Cys Thr Asn
35 40 45
Asn Ser Ile Ile Tyr Phe Phe Ala Arg Glu Ala Asp Arg Cys Val Phe
50 55 60
Ile Lys Glu Asp Ser Leu Thr Pro Gly Gln Asn Leu Trp
65 70 75

<210> 8062
 <211> 406
 <212> PRT
 <213> B.fragilis

<400> 8062
Asp Lys Gly Gly Ile Phe Val Asn Arg His Ser Arg Arg Thr Phe Trp
1 5 10 15
Ser Met Lys Gln Ile Asn Lys Gln Lys Leu Leu Glu Gln Met Val Tyr
20 25 30
Leu Val Ile Trp Leu Thr Val Ile Ser Val Pro Leu Val Gly Asp Tyr
35 40 45
Leu Phe Ala Ser Ile Ser Pro Val His Thr Phe Ser Trp Gln Thr Ile
50 55 60
Arg Met Ala Trp Leu Leu Thr Leu Pro Phe Ile Leu Leu Phe Val Val
65 70 75 80
Asn Asn Tyr Phe Leu Ala Pro Arg Leu Leu Leu Arg Lys Arg Tyr Trp
85 90 95
Ala Tyr Ala Leu Ser Leu Ala Gly Val Thr Leu Leu Phe Ile Leu
100 105 110
Tyr Pro Ser Ile Asn Pro Pro Gln His Lys Gln Phe Gln Asn Leu Met
115 120 125
Pro Met Gln Pro Arg Arg Tyr Pro Glu Gly Lys Val Leu Pro Asp Arg
130 135 140
Glu Arg Glu Phe Pro Asn Thr Phe Pro Glu His Ser Ser Pro Leu Leu
145 150 155 160

Leu Pro Lys Gln Glu Leu Asp Met Arg Trp Arg Gly Pro His Pro Leu
 165 170 175
 Pro Gly Tyr Phe Leu Gly Arg Leu Ser Leu Ala Leu Leu Val Val Gly
 180 185 190
 Ile Asn Val Ala Ile Lys Leu Leu Phe Lys Ser Met Arg Asp Glu Glu
 195 200 205
 Ala Leu Lys Glu Leu Glu His Gln His Leu Gln Ser Glu Leu Gln Tyr
 210 215 220
 Leu Lys Tyr Gln Ile Asn Pro His Phe Phe Met Asn Thr Leu Asn Asn
 225 230 235 240
 Ile His Ala Leu Val Asp Met Asp Ala Gly Lys Ala Lys Arg Thr Ile
 245 250 255
 Val Glu Leu Ser Lys Leu Met Arg Tyr Val Leu Tyr Glu Ala Ser Asn
 260 265 270
 Arg Thr Ile Leu Leu Ser Arg Glu Ile Gln Phe Leu Asp Asn Tyr Ile
 275 280 285
 Ala Leu Met Lys Leu Arg Tyr Thr Gly Arg Val Arg Ile Glu Cys Cys
 290 295 300
 Met Pro Asp Glu Val Pro Glu Val Gln Ile Pro Pro Leu Leu Phe Ile
 305 310 315 320
 Ser Phe Val Glu Asn Ala Phe Lys His Gly Val Ser Tyr Gln Glu Glu
 325 330 335
 Ser Phe Ile Arg Val Phe Met Ser Val Glu Asp Gly Arg Leu Val Phe
 340 345 350
 Arg Cys Ser Asn Ser Asn His Gly Arg Ser Val Glu Gln His His Gly
 355 360 365
 Ile Gly Leu Glu Asn Ile Arg Lys Arg Leu Arg Leu Leu Phe Gly Gln
 370 375 380
 Asp Tyr Thr Leu Ser Ile Asn Glu Arg Asp Asp Ser Phe Asn Val Leu
 385 390 395 400
 Leu Ile Ile Pro Leu Leu
 405

<210> 8063
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 8063
 Lys Ser Thr Met Gln Thr Glu Leu Ile Ile Val Ser Glu Tyr Cys His
 1 5 10 15
 Lys Cys His Ile Glu Pro Ser Phe Ile Asp Leu Leu Glu Glu Gly Gly
 20 25 30
 Leu Ile Glu Val Arg Thr Glu Gly Gly Glu His Tyr Leu Leu Ala Ser
 35 40 45
 Gln Leu Pro Asp Val Glu Arg Tyr Ser Arg Met Tyr Tyr Asp Leu Ser
 50 55 60
 Ile Asn Met Glu Gly Ile Asp Ala Ile His His Leu Leu Glu Arg Met
 65 70 75 80
 Glu Ile Met Arg Arg Glu Ile Ser Ser Leu Arg Asn Gln Leu Ile Val
 85 90 95
 Phe Lys Arg Glu Gly Ile Met Glu Asp Trp
 100 105

<210> 8064
 <211> 587
 <212> PRT
 <213> B.fragilis

<400> 8064

Pro Ile His Ile Ser Asp Ala Lys Ile Ile Ile Cys Trp Phe Lys Ser
 1 5 10 15
 His Ile Leu Asn Thr Lys His Leu Met Lys Ile Lys Tyr Leu Phe Tyr
 20 25 30
 Ile Gly Val Ala Thr Leu Ala Leu Ser Gly Cys Asn Asp Gly Phe Leu
 35 40 45
 Glu Arg Ala Pro Glu Ala Ile Asn Asp Lys Thr Phe Trp Asn Thr Thr
 50 55 60
 Gly Asp Leu Glu Thr Tyr Ala Asn Gln Phe Tyr Ser Tyr Leu Pro Gly
 65 70 75 80
 Gly Val Thr Ser Ile Ala Asp Gly Glu Ser Asp Asn Gln Val Pro Asn
 85 90 95
 Ser Ile Pro Gln Phe Phe Trp Asn Gln Leu Ser Thr Pro Ala Glu Ala
 100 105 110
 Ala Ser Trp Cys Asn Trp Ser Lys Gly Gly Trp Gln Pro Ile Arg Leu
 115 120 125
 Val Asn Tyr Phe Leu Thr His Tyr Gln Thr Val Ser Gly Lys Glu Ser
 130 135 140
 Glu Ile Asn Gln Tyr Val Ala Glu Val Arg Phe Phe Lys Ala Met Gln
 145 150 155 160
 Tyr Ala Gly Leu Met Arg Thr Phe Gly Asp Ile Pro Trp Leu Asp Lys
 165 170 175
 Asp Leu Gly Thr Gly Asp Thr Asp Ile Leu Tyr Gly Pro Lys Leu Lys
 180 185 190
 Arg Tyr Glu Val Met Asp Lys Ile Ile Glu Glu Phe Asp Phe Ala Ile
 195 200 205
 Gln Trp Leu Pro Glu Lys Pro Ala Thr Gly Arg Ile Gly Lys Asp Val
 210 215 220
 Ala Arg Gln Leu Lys Ala Arg Thr Cys Leu His Glu Gly Thr Tyr Tyr
 225 230 235 240
 Lys Tyr His Thr Glu Leu Gly Trp Ala Asp Lys Ala Asp Arg Leu Leu
 245 250 255
 Lys Met Ala Ala Asp Glu Thr Asp Ala Ile Met Ala Thr Gly Lys Tyr
 260 265 270
 Glu Ile Tyr Asn Thr Gly His Pro Glu Lys Asp Tyr Tyr Asp Val Phe
 275 280 285
 Val Met Glu Asp Lys Thr Asn Leu Lys Glu Ala Ile Leu Pro Val Thr
 290 295 300
 Tyr Leu Asp Gly Lys Arg Lys His Gly Met Ser Arg Thr Leu Ala Glu
 305 310 315 320
 Ala Asn Thr Gly Phe Ser Lys Asp Phe Val Glu Ser Tyr Leu Cys Leu
 325 330 335
 Asn Gly Lys Pro Ile Thr Gly Asn Asp Gln Tyr Lys Gly Asp Thr Asn
 340 345 350
 Met Lys Asp Glu Thr Thr Asp Arg Asp Pro Arg Leu Lys Gln Thr Ile
 355 360 365
 Leu Thr Trp Asp Phe Pro Thr Arg Val Thr Val Ala Thr Asn Asp Ser
 370 375 380
 Thr Tyr Ile Glu Lys Glu Glu Asp Phe Ile Ser Gln Tyr Cys Leu Thr
 385 390 395 400
 Gly Tyr Lys Ser Ile Lys Tyr Phe Ile Pro Thr Asp Lys Ala Phe Glu
 405 410 415
 Ala Asn Asn Asn Thr Tyr Asp Gly Ile Ala Tyr Arg Tyr Ala Glu Thr
 420 425 430
 Leu Leu Ile Asn Ala Glu Ala Lys Ala Glu Leu Gly Thr Ile Thr Gln
 435 440 445
 Ala Asp Leu Asn Lys Thr Ile Asn Val Leu Arg Asp Arg Ala Gly Met
 450 455 460

Pro His Leu Thr Leu Glu Val Gly Phe Thr Asp Pro Asn Trp Pro Ala
 465 470 475 480
 Trp Gly Tyr Ser Leu Thr Pro Leu Leu Gln Glu Ile Arg Arg Glu Arg
 485 490 495
 Arg Ile Glu Leu Ala Gly Glu Gly Phe Arg Trp Asp Asp Leu Ala Arg
 500 505 510
 Trp Lys Ala Gly Ala Ile Cys Asn Asn Val Lys Thr Tyr Ile Gly Lys
 515 520 525
 Arg Glu Pro Tyr Lys Glu Gly Gln Tyr Ala Ile Val Tyr Pro Ala Tyr
 530 535 540
 Thr Asn Asp Asn Tyr Ser Tyr Glu Ala Gly Lys Ser Arg Thr Trp Asn
 545 550 555 560
 Asp Arg Leu Tyr Leu Arg Pro Ile Pro Thr Gly Glu Leu Gln Arg Asn
 565 570 575
 Asp Asn Leu Leu Pro Gln Asn Pro Gly Trp Glu
 580 585

<210> 8065
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8065

Gln Pro Val Val Ser Ser Lys Val Leu Ala Ile His Tyr Pro Val Asn
 1 5 10 15
 Tyr Gln Pro Ala Asn Leu Ser Lys Arg Leu Val Leu Thr Arg Asn Leu
 20 25 30
 Ser Glu Lys Cys Thr Ser Leu Arg Ile Leu Ser Asn Leu Ser Asp Ser
 35 40 45
 Tyr Asp His Glu Tyr Arg Val Ile Val Asn Phe Gln Ile Phe
 50 55 60

<210> 8066
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 8066

Met Gly Phe Ala Pro Met Asn Asn Pro Lys Ile Ala Ile Ala Val Tyr
 1 5 10 15
 Val Glu Asn Gly Gly Phe Gly Ala Val Tyr Gly Val Pro Ile Gly Ala
 20 25 30
 Leu Met Met Glu Gln Tyr Leu Lys Gly Lys Leu Ser Pro Glu Asn Glu
 35 40 45
 Ile Arg Ala Glu Glu Tyr Ser Asn Arg Val Ile Met Tyr Gly Asn Glu
 50 55 60
 Glu Arg
 65

<210> 8067
 <211> 437
 <212> PRT
 <213> B.fragilis

<400> 8067

Leu Cys Met Glu Thr Arg Ser Val Ser Leu Trp Lys Thr Leu Asp Trp
 1 5 10 15
 Val Thr Ile Val Ile Tyr Leu Leu Leu Ile Ile Gly Gly Trp Phe Ser
 20 25 30

Val	Cys	Gly	Ala	Ser	Tyr	Asp	Tyr	Gly	Asp	Arg	Asp	Phe	Leu	Asp	Phe
	35						40					45			
Ser	Thr	Arg	Ala	Gly	Arg	Gln	Phe	Val	Trp	Ile	Ile	Cys	Ser	Phe	Gly
	50					55					60				
Leu	Gly	Phe	Ile	Leu	Leu	Met	Leu	Glu	Glu	Arg	Met	Tyr	Asp	Met	Phe
65					70					75					80
Ala	Tyr	Leu	Ile	Tyr	Ile	Gly	Met	Ile	Leu	Leu	Leu	Ile	Val	Thr	Ile
				85					90					95	
Phe	Ile	Ala	Pro	Asp	Thr	Lys	Gly	Ser	Arg	Ser	Trp	Leu	Ile	Leu	Gly
			100					105					110		
Pro	Val	Ser	Leu	Gln	Pro	Ala	Glu	Phe	Ala	Lys	Phe	Ala	Thr	Ala	Leu
		115					120					125			
Ala	Leu	Ala	Lys	Phe	Met	Asn	Ala	Tyr	Ser	Phe	Asn	Ile	Lys	Lys	Trp
	130					135					140				
Lys	Cys	Phe	Leu	Pro	Leu	Val	Ala	Phe	Ile	Leu	Leu	Pro	Met	Leu	Leu
145					150					155					160
Ile	Ile	Leu	Gln	Lys	Glu	Thr	Gly	Ser	Ala	Leu	Val	Tyr	Leu	Ala	Phe
			165						170					175	
Phe	Leu	Val	Leu	Tyr	Arg	Glu	Gly	Met	Pro	Gly	Val	Val	Leu	Phe	Ser
		180						185					190		
Gly	Val	Cys	Ala	Val	Val	Tyr	Phe	Val	Val	Gly	Ile	Arg	Phe	Asp	Gln
	195						200					205			
Val	Phe	Ile	Ala	Asp	Thr	Pro	Thr	Pro	Ile	Gly	Glu	Phe	Ala	Val	Leu
	210					215					220				
Leu	Met	Ile	Leu	Leu	Phe	Ala	Gly	Ser	Met	Val	Trp	Val	Tyr	Arg	Lys
225					230					235					240
Lys	Trp	Glu	Pro	Val	Arg	Asn	Met	Ile	Gly	Gly	Ser	Leu	Leu	Val	Leu
			245						250					255	
Leu	Ile	Ala	Tyr	Leu	Val	Ser	Glu	Tyr	Leu	Ser	Pro	Phe	Asn	Leu	Val
		260						265					270		
Trp	Val	Glu	Trp	Gly	Leu	Cys	Val	Val	Thr	Ile	Gly	Tyr	Leu	Leu	Tyr
	275					280						285			
Leu	Ser	Leu	Ser	Glu	Arg	Gln	Arg	Ala	Tyr	Leu	Leu	Ile	Gly	Leu	Phe
	290					295					300				
Ala	Leu	Gly	Ser	Ile	Gly	Phe	Leu	Tyr	Ser	Ser	Asp	Tyr	Val	Phe	Asp
305				310						315					320
Asn	Ile	Leu	Glu	Pro	His	Gln	Gln	Ile	Arg	Leu	Lys	Val	Val	Leu	Gly
			325						330					335	
Met	Glu	Glu	Asp	Leu	Ala	Gly	Pro	Gly	Ser	Asn	Leu	Asn	Gln	Ser	Lys
		340						345					350		
Ile	Ala	Ile	Gly	Ser	Gly	Gly	Leu	Thr	Gly	Lys	Gly	Phe	Leu	Asn	Gly
	355					360						365			
Thr	Gln	Thr	Arg	Leu	Lys	Tyr	Gly	Pro	Lys	Gln	Asn	Thr	Asp	Phe	Phe
	370					375					380				
Phe	Trp	Thr	Gly	Gly	Glu	Glu	Gln	Gly	Phe	Val	Val	Arg	Asp	Pro	Phe
385				390						395					400
Phe	Val	Phe	Leu	Gly	Val	Ile	Leu	Arg	Phe	Ile	Ala	Thr	Glu	Asn	Gly
			405						410					415	
Lys	Ile	Phe	Phe	Trp	Gly	Gly	Val	Met	Val	Phe	Arg	Val	Arg	Thr	Ile
		420						425					430		
Pro	Cys	Pro	Ile	Gly											
		435													

<210> 8068

<211> 346

<212> PRT

<213> B.fragilis

<400> 8068

Phe Ile Leu Thr Ala Pro Ser Ala Met Arg Cys Asn Thr Gly Pro Leu
 1 5 10 15
 Lys Asp Leu Met Ile Asp Gly Ile Ile Gly Gly Val Gly Gly Val Ile
 20 25 30
 Val Phe Leu Pro Asn Ile Leu Ile Leu Tyr Phe Cys Ile Ser Leu Met
 35 40 45
 Glu Asp Ser Gly Tyr Met Ala Arg Ala Ala Phe Ile Met Asp Lys Ile
 50 55 60
 Met His Lys Met Gly Leu His Gly Lys Ser Phe Ile Pro Leu Ile Met
 65 70 75 80
 Gly Phe Gly Cys Asn Val Pro Ala Ile Met Ala Ser Arg Thr Ile Glu
 85 90 95
 Asn Arg Lys Ser Arg Leu Ile Thr Met Leu Val Asn Pro Leu Met Ser
 100 105 110
 Cys Ser Ala Arg Leu Pro Ile Tyr Leu Leu Leu Val Gly Ala Phe Phe
 115 120 125
 Pro Lys Asn Gly Ser Leu Val Leu Leu Ala Ile Tyr Ala Ile Gly Ile
 130 135 140
 Ala Leu Ala Val Ile Met Ala Arg Leu Phe Ser Arg Phe Leu Val Lys
 145 150 155 160
 Gly Asp Asp Thr Pro Phe Val Met Glu Leu Pro Pro Tyr Arg Met Pro
 165 170 175
 Thr Met Lys Ser Ile Phe Arg His Thr Trp Glu Lys Gly Ala Gln Tyr
 180 185 190
 Leu Lys Lys Met Gly Gly Ile Ile Met Ile Ala Ser Ile Ile Ile Trp
 195 200 205
 Phe Leu Gly Tyr Tyr Pro Asp His Asp Ala Tyr Pro Thr Gln Ala Glu
 210 215 220
 Gln Gln Glu Asn Ser Tyr Ile Gly Gln Ile Gly Gln Ala Val Glu Pro
 225 230 235 240
 Val Leu Lys Pro Leu Gly Phe Asp Trp Lys Leu Ser Ile Gly Leu Leu
 245 250 255
 Ser Gly Val Gly Ala Lys Glu Leu Val Val Ser Thr Leu Gly Val Leu
 260 265 270
 Tyr Thr Asn Asp Ala Asp Ala Asp Val Val Ser Leu Ala Glu Arg Ile
 275 280 285
 Pro Ile Thr Pro Leu Ala Ala Phe Ser Tyr Met Leu Phe Val Leu Ile
 290 295 300
 Tyr Phe Pro Cys Ile Ala Thr Leu Val Ala Ile Lys Gln Glu Ser Gly
 305 310 315 320
 Ser Trp Lys Trp Ala Ile Phe Thr Ala Gly Tyr Thr Thr Ala Leu Ala
 325 330 335
 Trp Leu Val Ser Phe Ala Val Tyr Gln Ile
 340 345

<210> 8069

<211> 94

<212> PRT

<213> B.fragilis

<400> 8069

Leu Glu Val Gly Tyr Leu His Gly Arg Ile Tyr His Gly Val Gly Met
 1 5 10 15
 Ala Cys Phe Ile Cys Arg Leu Ser Asp Met Arg Asn Val Phe Met Asn
 20 25 30
 Trp Gln Glu Trp Val Val Gly Leu Leu Ile Val Leu Cys Val Thr Arg
 35 40 45
 Ile Leu Tyr Gly Ile Tyr Leu Phe Phe Arg Arg Val Lys Glu Asn Asp
 50 55 60

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 8070

Tyr 1	Ile	Lys	Ser	Ile 5	Cys	Tyr	Leu	Tyr	Ile 10	Cys	Val	Tyr	Lys	Tyr 15	Gly
Ile	Thr	Met	Asn 20	Arg	His	Lys	Leu	Ala 25	Phe	Ser	Leu	Ile	Gly 30	Ile	Phe
Ile	Val	Gln 35	Leu	Ser	Tyr	Ala 40	Gly	Tyr	Phe	Lys	His	Ile 45	Gly	Arg	Glu
Glu	Gly 50	Leu	Ser	Gln	Ser	Ser 55	Val	Met	Ala	Ile	Tyr	Gln	Asp	Lys	Leu
Gly 65	Arg	Met	Trp	Phe	Gly 70	Thr	Arg	Glu	Gly	Val	Asn	Ile	Tyr	Asn	Ser
Asn	Lys	Met	Ala 85	Val	Tyr	Lys	Ala	Trp	Ile 90	Gln	Asn	Gly	Asn	Arg 95	Pro
Asp	Gln	Lys	Ile 100	Leu	Ile	Gly	Asn	Glu	Val 105	Ser	Ala	Ile	Thr 110	Gly	Ser
Gln	Asn	Gly 115	Asp	Val	Phe	Leu	Ile 120	Val	Asp	His	Ala	Leu	Leu 125	Lys	Tyr
Asp	Ile 130	Arg	Lys	Glu	Thr	Phe 135	Glu	Arg	Leu	Arg	Gln	Gly	Ser	Val	Tyr
Ala 145	Leu	Thr	Ser	His	Ala 150	Gly	Glu	Ile	Trp	Cys	Ala	Gly	His	Asp	Ser
Ile	Phe	Arg	Tyr	Asn 165	Pro	Gln	Asn	Asn	Gln 170	Leu	Asp	Phe	Gln	Leu 175	Lys
Thr	Gly	Ile	Ser 180	Ser	Ile	Asn	Tyr	Leu	Thr 185	Ile	Asn	Gly	Asn	Arg	Phe
Tyr	Ile	Gly 195	Ala	Lys	Glu	Gly	Leu	Tyr	Thr 200	Thr	Thr	Glu	Asn	Lys	Arg
Val	Gln 210	Cys	Leu	Ile	Pro	Lys	Val	Asp	Val	Tyr	Arg	Ile	Phe	Gln	Ser
Ser 225	Cys	Gln	Glu	Leu	Trp 230	Val	Gly	Cys	Arg	Thr	Gln	Gly	Leu	Tyr	Arg
Ile	Asn	Arg	Asn 245	Gly	Arg	Ile	Asn	Arg	Ile 250	Pro	Tyr	Asp	Pro	Ser	Ser
Pro	Asn	Gly 260	Ile	Ser	Ser	Glu	Gln	Ile	Arg 265	Glu	Phe	Val	Glu	Asp	Gln
Gln	Gly 275	Asn	Ile	Trp	Phe	Gly	Thr	Phe	Asp	Gly	Leu	Gln	Lys	Tyr	Asp
Pro	Ser 290	Thr	Gln	Thr	Tyr	Ser	Leu	Ile	Lys	Gln	Glu	Gln	Arg	Pro	Gly
Gly 305	Leu	Ser	His	Ser	Ser 310	Ile	Phe	Ser	Leu	Tyr	Gln	Asp	Val	Gln	Gly
Thr	Ile	Trp	Ile 325	Gly	Ser	Tyr	Tyr	Gly	Gly 330	Val	Asn	Tyr	Phe	Asn	Pro
Asp	Asn	Asn 340	Ala	Phe	Asn	Tyr	Tyr	Thr	Tyr 345	Asn	Pro	Asp	Arg	Ser	Asp
Cys	Leu 355	Asn	Tyr	Pro	Phe	Ala	Gly	Ala	Met	Thr	Glu	Asp	Lys	Asp	His
His	Leu 370	Trp	Ile	Cys	Thr	Asp 375	Gly	Gly	Gly	Leu	Ala	Cys	Leu	Asp	Arg

Gln Ala Gly His Phe Thr Thr Tyr Thr Ala Gly Gly Pro Asn Ser Leu
 385 390 395 400
 Pro His Asn Asn Leu Lys Ser Ile Cys Tyr Asp Pro Lys Arg Asp Cys
 405 410 415
 Leu Tyr Ile Gly Thr His Met Gly Gly Leu Ser Arg Phe Asp Arg Lys
 420 425 430
 Thr Gly Arg Phe Tyr Asn Tyr Leu Asn His Ser Thr Lys Gly Leu Lys
 435 440 445
 Glu Pro Asn Asp Val Ile Phe Gln Val Ser Phe Tyr Asn Asp Gln Leu
 450 455 460
 Ile Val Ser Ala Arg Asn Gly Val Phe Ser Met Asn Pro Asp Thr Asn
 465 470 475 480
 Glu Phe Arg Leu Leu Tyr Asp Gly Tyr Tyr Tyr Gln Thr Phe Thr Ile
 485 490 495
 Asp Pro Lys Gly Phe Leu Trp Leu Ser Ala Gly Thr Asn Leu Tyr Ser
 500 505 510
 Ile Asn Leu Lys His Pro Glu Glu Val Lys Ser Phe Ser Leu Pro Ala
 515 520 525
 Ser Ile Gly Gln Phe Gly Ile Ser Lys Ile Leu Lys Gly Asn Asn Gln
 530 535 540
 Tyr Leu Tyr Ile Ala Thr Leu Gly Ser Gly Leu Phe Cys Tyr Asn Glu
 545 550 555 560
 Gln Thr Gln Thr Cys Ile Asn Tyr Thr Pro Glu Gln Asn Gln Leu Leu
 565 570 575
 Ser Asn Tyr Cys Tyr Asn Leu Leu Gln Thr Ser Thr Asp Asn Ile Leu
 580 585 590
 Ile Thr Ser Asp Arg Gly Ile Thr Leu Phe Asn Pro Thr Thr Glu Ser
 595 600 605
 Phe Arg Ser Ile Glu Leu Asp Asn Gly Leu Ser Leu Ser Ser Ile Ile
 610 615 620
 Asn Gly Cys Gly Val Trp Met Cys Ser Asp His Thr Ile Phe Ile Gly
 625 630 635 640
 Gly Thr Gly Gly Leu Ser Ser Phe Leu Glu Lys Asp Leu Asn Lys Glu
 645 650 655
 Tyr Pro Lys Pro Lys Leu Tyr Phe Ser Ser Leu Ser Val Asn Asn Ala
 660 665 670
 Arg Ile Ser Pro Asp Asp Lys Ser Arg Ile Leu Thr Glu Gly Leu Pro
 675 680 685
 Phe Val Arg Glu Ile Asn Leu Asn Ala Thr Gln Asn Asn Leu Thr Val
 690 695 700
 Glu Phe Ala Ser Ser Asn Tyr Val Asp Ile Leu Asn Asn Thr Trp Tyr
 705 710 715 720
 Glu Tyr Gln Leu Glu Gly Phe Asp Lys Gln Trp Ser Leu Thr Ser Gln
 725 730 735
 Thr Ser Leu Lys Tyr Thr Asn Leu Asp Pro Gly Asp Tyr Val Leu His
 740 745 750
 Val Arg Gln Lys Gly Asn Ser Leu Lys Met Arg Lys Ala Gln Glu Ile
 755 760 765
 Leu Leu Gln Ile His Ile Asn Thr Pro Trp Tyr Leu Thr Trp Trp Ala
 770 775 780
 Trp Leu Ser Tyr Ile Thr Ile Ser Ile Ser Val Thr Tyr Phe Ile Trp
 785 790 795 800
 Arg Glu Lys Ser Ser Arg Arg Thr Leu Ala Ile Leu Arg Gln Ser Leu
 805 810 815
 Ser Ser Leu Thr Tyr His Gln Ile Leu Phe Asn Pro Ala Ile
 820 825 830

<210> 8071

<211> 247

<212> PRT

<213> B.fragilis

<400> 8071

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Met Ile Lys Ser Ile Leu Ile Ala Leu Cys Thr Val Leu Leu Cys Trp
1      5      10      15
Asn Ser Ile Pro Ala Glu Ala Gln Thr Pro Gln Asp Ser Val Arg Phe
20     25     30
Ile Gly Tyr Leu Pro Val Arg His Thr Asp Pro Thr Lys Trp Ile Thr
35     40     45
Arg Tyr Gln Ser Glu Ile Asp Arg Tyr Gln Thr Glu Asn Gln Met Leu
50     55     60
Lys Asp Thr Ser Cys Asp Val Leu Phe Leu Gly Ser Ser Ser Ile Asn
65     70     75     80
Leu Trp Asp Asn Ile Tyr Arg Asp Met Ala Pro Leu Lys Ile Leu Arg
85     90     95
Arg Ser Tyr Gly Gly Ala Ala Leu Arg Asp Met Leu Tyr Asn Tyr Asp
100    105    110
Val Ile Ala Arg Gly Tyr His Pro Arg Ser Ile Val Ile Tyr Val Glu
115    120    125
Asn Asp Leu Ala Gly Thr Pro Glu Asp Leu Thr Val Gly Glu Thr Phe
130    135    140
Asp Phe Phe Arg Leu Leu Thr Asn Arg Leu Gln Arg Asp Tyr Pro Asp
145    150    155    160
Ile Pro Ile Phe Ile Leu Ser Tyr Lys Pro Ser Leu Ala Arg Lys Glu
165    170    175
Met Ile Pro Lys His Glu Ile Ile Asn Ala Leu Leu Gln Glu Tyr Ala
180    185    190
Ser Lys Arg Gly Gly Leu Thr Tyr Ile Asp Val Ala Ser Cys Leu Tyr
195    200    205
Asp Asn Asn Gly Lys Leu Arg Lys Asp Ile Phe Lys Gln Asp Gly Leu
210    215    220
His Met Asn Gln Asn Gly Tyr Asp Leu Trp Thr Ala Ile Leu Lys Pro
225    230    235    240
Lys Ile Leu Glu Ser Ile Arg
245

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<210> 8072

<211> 189

<212> PRT

<213> B.fragilis

<400> 8072

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Lys Ala Ser Asn Cys Thr Ser Ala Ile Arg Val Glu Lys Arg Val Arg
1      5      10      15
Tyr Phe Gly His Asn Thr Leu Ser Ser Asp Ser Ile Pro Trp Gly Leu
20     25     30
Lys Asp Glu Tyr Cys Pro Ser Tyr Phe Asn Glu Met Arg Asn Leu Thr
35     40     45
Leu Val Asn Arg Glu Tyr Cys Ile Arg Asn Pro Lys His Tyr Lys Gly
50     55     60
Tyr Gly Pro Asp Cys Trp Gly Leu Thr Ala Ser Tyr Ser Val Asp Gly
65     70     75     80
Tyr Ala Ala His Gly Pro Leu Glu Arg Asp Asp Arg Gly Val Ile Ser
85     90     95
Pro Thr Ala Ala Leu Ser Ser Ile Val Tyr Thr Pro Asp Gln Ser Leu
100    105    110
Gln Val Met His His Leu Tyr Glu Met Gly Asp Lys Val Phe Gly Pro
115    120    125

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Tyr Gly Phe Tyr Asp Ala Phe Ser Glu Thr Ala Asp Trp Tyr Pro Lys
 130 135 140
 Arg Tyr Leu Ala Ile Asp Gln Gly Pro Ile Ala Val Met Ile Glu Asn
 145 150 155 160
 Tyr Arg Thr Gly Leu Leu Trp Lys Leu Phe Met Ser His Pro Asp Val
 165 170 175
 Gln Asn Gly Leu Lys Lys Leu Gly Phe Asn Val Lys Lys
 180 185

<210> 8073

<211> 559

<212> PRT

<213> B.fragilis

<400> 8073

Leu Ser Arg Ser Ser Arg Arg Thr Leu Ala Met Ser Leu Glu Lys Glu
 1 5 10 15
 Arg Ile Glu Lys Glu His Ile Glu Glu Met Asn Gln Ala Lys Leu Arg
 20 25 30
 Phe Phe Thr Asn Val Ser His Glu Phe Arg Thr Pro Leu Thr Leu Ile
 35 40 45
 Ile Ser Gln Val Glu Leu Met Leu Gln Lys Asn Thr Ile Pro Pro Ser
 50 55 60
 Leu His Asn Ser Ile Phe Arg Ile Arg Lys His Ala Gln Gln Met Lys
 65 70 75 80
 Leu Leu Ile Ser Glu Leu Leu Asp Phe Arg Lys Phe Asp Gln Asn Tyr
 85 90 95
 Ile Gln Leu Lys Leu Ser Glu Gln Ser Leu Asn Thr Phe Leu Glu Glu
 100 105 110
 Val Tyr Leu Ser Phe Ser Ala Tyr Ala Ser Gln Lys Ser Ile Ser Tyr
 115 120 125
 His Leu Lys Leu Leu Glu Gln Asp Ile Ser Ile Trp Ile Asp Asp Trp
 130 135 140
 Gln Met Arg Lys Val Leu Phe Asn Leu Leu Ser Asn Ala Phe Lys His
 145 150 155 160
 Val Pro Asp Lys Gly Glu Ile Ser Ile Leu Thr Ser Thr Thr Pro Asp
 165 170 175
 Gln Val Val Ile Ala Val Lys Asp Ser Gly Asn Gly Ile Ser Lys Glu
 180 185 190
 Glu Gln Glu Arg Ile Phe Asp Arg Phe Tyr Gln Ala Asp Asn Arg Asn
 195 200 205
 Lys Ala Ile His Val Gly Thr Gly Ile Gly Leu Ala Leu Thr Lys Ser
 210 215 220
 Ile Ile Gln Leu His His Gly Thr Ile Glu Val Glu Ser Glu Leu Asn
 225 230 235 240
 Glu Gly Ser Cys Phe Ile Val Lys Leu Pro Lys Thr Arg Asp Cys Phe
 245 250 255
 Glu Lys Asp Thr Glu Val Val Phe Leu Glu Ser Pro Glu Lys Glu Pro
 260 265 270
 Met Val Gln Glu Asn Thr Ile Pro Asp Glu Asn Phe Met Lys Lys Asp
 275 280 285
 Asp Ser Thr Phe Glu Thr Pro Leu Ile Asp Glu Arg Glu Gly Lys Arg
 290 295 300
 Lys Val Leu Leu Val Glu Asp Asn Val Glu Leu Leu Gln Val Leu Lys
 305 310 315 320
 Glu Ile Phe Ser Ser Leu Tyr Gln Val Val Thr Ala Ala Asn Gly Glu
 325 330 335
 Glu Gly Leu Lys Gln Ala Phe Ala Glu Val Pro Asp Leu Ile Val Ser
 340 345 350

Asp Val Met Met Pro Val Met Thr Gly Thr Glu Met Cys Leu Lys Ile
 355 360 365
 Lys Asn Asn Ile Asn Leu Cys His Ile Pro Val Val Leu Leu Thr Ala
 370 375 380
 Leu Asp Thr Val Asp Gln Asn Ile Glu Gly Leu Arg Arg Gly Ala Asp
 385 390 395 400
 Asp Tyr Ile Thr Lys Pro Phe Asn Ala Lys Ile Leu Ile Thr Arg Cys
 405 410 415
 Asn Asn Leu Ile Arg Asn Arg Leu Leu Met Gln Ser Arg Phe Ala Lys
 420 425 430
 Asp Gln Ile Leu Glu Ile Asn Leu Leu Ala Ala Asn Pro Ile Asp Lys
 435 440 445
 Gly Phe Leu Asp Arg Val Ile Lys Val Val Asp Lys His Ile Asp Asn
 450 455 460
 Glu Asp Phe Asp Ile Gly Met Leu Cys Gln Glu Leu Gly Met Gly Arg
 465 470 475 480
 Thr Leu Leu His Thr Lys Phe Lys Ala Leu Thr Gly Met Thr Pro Asn
 485 490 495
 Glu Phe Ile Leu Asn His Arg Leu Lys Ile Ala Ser Leu Met Leu Lys
 500 505 510
 Asn Glu Pro Tyr Leu Gln Val Ala Glu Ile Ser Asp Arg Leu Gly Phe
 515 520 525
 Gly Ser Pro Arg Tyr Phe Ser Arg Cys Phe Lys Asn Gln Tyr Asn Val
 530 535 540
 Thr Pro Met Glu Tyr Arg Lys Gly Ala Lys Gln Glu Asn Leu Lys
 545 550 555

<210> 8074

<211> 1008

<212> PRT

<213> B.fragilis

<400> 8074

Ser Ile Met Arg Lys Ser Lys Leu His Leu Leu Pro Leu Ser Ser Lys
 1 5 10 15
 Arg Val Leu Val Ser Thr Ser Leu Ile Met Leu Leu Ser Gly Ser Ala
 20 25 30
 Trp Ala Val Ser Ser Gln Glu Thr Val Glu Asn Gly Asp Ala Ile Thr
 35 40 45
 Ala Val Pro Gln Gln Arg Arg Thr Val Lys Gly Ile Val Lys Asp Ala
 50 55 60
 Asn Gly Glu Pro Ile Ile Gly Ala Asn Val Ile Val Lys Gly Asn Lys
 65 70 75 80
 Thr Ile Gly Val Ile Thr Asn Leu Asn Gly Glu Phe Ser Leu Glu Val
 85 90 95
 Pro Ser Asn Ala Thr Leu Gln Ile Ser Tyr Ile Gly Tyr Leu Asn Lys
 100 105 110
 Glu Val Lys Val Ser Gly Asn Gln Val Ser Phe Asn Ile Gln Leu Glu
 115 120 125
 Glu Asp Ser Lys Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Thr
 130 135 140
 Gln Lys Lys Ala Asn Leu Thr Gly Ala Val Ser Ser Val Asp Phe Glu
 145 150 155 160
 Glu Gln Thr Lys Ser Arg Pro Ile Thr Thr Val Ser Ser Ala Leu Ala
 165 170 175
 Gly Leu Ser Pro Gly Leu Gln Ala Ser Ser Gly Ser Ala Met Pro Gly
 180 185 190
 Glu Asp Asn Thr Thr Leu Arg Val Arg Gly Asn Gly Thr Met Asn Asn
 195 200 205

Ala	Ser	Pro	Leu	Ile	Ile	Ile	Asp	Gly	Met	Glu	Gly	Ser	Leu	Asn	Ala
210						215				220					
Ile	Asn	Pro	Gln	Asp	Ile	Glu	Asn	Ile	Ser	Ile	Leu	Lys	Asp	Ala	Ala
225					230					235					240
Ser	Cys	Ala	Ile	Tyr	Gly	Ala	Arg	Ala	Ala	Asn	Gly	Val	Ile	Leu	Val
				245					250					255	
Thr	Thr	Lys	Ser	Gly	Asp	Arg	Asp	Lys	Ile	Gln	Val	Asn	Tyr	Ser	Gly
			260					265					270		
Arg	Ile	Ser	Phe	Asn	Ser	Pro	Thr	Arg	Met	Ile	Glu	Thr	Met	Ser	Asn
		275					280					285			
Tyr	Ala	Asp	Tyr	Met	Glu	Leu	Met	Asn	Glu	Ser	Cys	Glu	Asn	Val	Gly
	290					295					300				
Ser	Gly	Thr	Leu	Phe	Asp	Gln	Lys	Tyr	Ile	Asp	Leu	Trp	Arg	Glu	Lys
305					310					315					320
Ser	Lys	Asp	Pro	Asn	Gly	Val	Asn	Glu	Asn	Gly	Val	Pro	Asn	Tyr	Ile
				325					330					335	
Ala	Tyr	Pro	Asn	Thr	Asn	Trp	Leu	Lys	Glu	Leu	Tyr	Ser	Gly	Gly	Met
			340					345					350		
Ile	His	Glu	His	Asn	Leu	Ser	Val	Ser	Gly	Gly	Ser	Asn	Lys	Ile	Arg
	355						360					365			
Phe	Leu	Leu	Ser	Ala	Arg	Tyr	Gln	Asp	Asn	Glu	Gly	Ile	Val	Asp	Asn
	370					375					380				
Thr	Ala	Asn	Lys	Thr	Tyr	Ser	Val	Arg	Ala	Asn	Ile	Glu	Ala	Asn	Pro
385					390					395					400
Thr	Gln	Trp	Leu	Thr	Leu	Gly	Thr	Arg	Thr	Tyr	Ala	Ser	Gln	Met	Asp
			405						410					415	
Arg	Glu	Val	Gly	Asp	Phe	Ser	Asn	Ala	Asn	Thr	Phe	Leu	Arg	Gln	Ser
			420					425					430		
Thr	Ala	Gly	Thr	Tyr	Pro	Glu	Trp	Asn	Gly	Ser	Phe	Gly	Tyr	Pro	Glu
		435					440					445			
Cys	Pro	Asp	Glu	Arg	Ala	Thr	Ala	Asn	Asn	Pro	Leu	Tyr	Lys	Leu	Ala
	450					455					460				
Arg	Asn	Asp	Gly	Phe	Lys	Arg	Tyr	Asn	Arg	Phe	Asn	Thr	Thr	Leu	Phe
465					470					475					480
Ser	Lys	Val	Lys	Phe	Phe	Lys	Asp	Leu	Ser	Trp	Asp	Phe	Asn	Phe	Asn
				485					490					495	
Tyr	Asn	Arg	Tyr	Ile	Tyr	Glu	Thr	Arg	Gln	Trp	Gly	Val	Pro	Ala	Tyr
			500					505					510		
Gln	Thr	Arg	Phe	Ser	Asp	Gly	Val	Ile	Val	Asp	Gly	Ile	Thr	Pro	Pro
		515					520					525			
Ser	Gln	Leu	Ser	Thr	Ser	Phe	Gly	Tyr	Glu	Ser	Asn	Tyr	Ser	Tyr	Thr
		530				535					540				
Leu	Glu	Asn	Leu	Leu	Asn	Tyr	His	His	Thr	Phe	Ala	Gln	Lys	His	Asp
545					550					555					560
Val															

675	680	685
Asn Tyr Glu Tyr Met Trp Val Tyr Ser Thr Thr Asn Ala Val Phe Gly		
690	695	700
Asn Ala Leu Asn Ser Ala Leu Tyr Met Gly Ala Ile Ala Asn Ser Leu		
705	710	715
Leu Lys Trp Glu Ser Thr Thr Ser Val Asn Phe Gly Ile Asp Val Asn		
	725	730
		735
Leu Leu Lys Asn Arg Leu Ser Ile Ser Ala Asp Leu Tyr Gln Lys Lys		
	740	745
		750
Thr Asp Gly Ile Leu Tyr Arg Pro Thr Ile Pro Tyr Val Phe Gly Thr		
	755	760
		765
Met Thr Ala Pro Arg Gln Asn Leu Ala Lys Val Ser Asn Lys Gly Val		
	770	775
		780
Glu Leu Ser Leu Gly Trp Arg Asp Asn Ile Gly Gly Val Ser Tyr Ser		
785	790	795
		800
Ile Asn Gly Asn Phe Ser Tyr Asn Lys Ser Asn Ile Asp Ala Tyr Asn		
	805	810
		815
Gly Thr Tyr Glu Arg Thr Trp Val Glu Asp Pro Asn Asn Lys Leu Thr		
	820	825
		830
Gly Gly Lys Trp Glu Asp Asn Ile Gly Lys Val Ser Ser Gly Gly Thr		
	835	840
		845
Thr Pro Ile Val Glu Gly Arg Met Met Asn Glu Tyr Tyr Leu Arg Asn		
	850	855
		860
Val Tyr His Gly Asn Gly Ser Tyr Tyr Asn Ala Asp Gly Ser Val Asn		
865	870	875
		880
Pro Gln Gly Gly Pro Lys Thr Gly Met Ile Arg Thr Glu Lys Asp Met		
	885	890
		895
Ala Trp Val Lys Asp Met Ile Ala Ala Gly Tyr Glu Phe Gln Pro Gly		
	900	905
		910
Lys Thr Val Ala Lys Asn Lys Ile Trp Tyr Gly Glu Tyr Ile Tyr Ala		
	915	920
		925
Asp Ser Lys Tyr Asn Gly Val Tyr Gly Asp Asp Asn Asp Tyr Thr Phe		
	930	935
		940
Gln Lys Thr Ser Asn Lys Pro Lys Tyr Asn Phe Arg Phe Gln Ala Phe		
945	950	955
		960
Cys Arg Met Glu Arg Ile Arg Pro Ser Leu Trp Tyr Gly Arg Asn Leu		
	965	970
		975
Pro Asp Leu Thr Tyr Phe Gly Gly Pro Pro Gln Asp Thr Thr Pro Asn		
	980	985
		990
Leu Leu Lys Trp Gly Arg Pro Phe Ala Pro Pro Val Ala Gly Glu Tyr		
	995	1000
		1005

<210> 8075

<211> 311

<212> PRT

<213> B.fragilis

<400> 8075

Leu Lys Phe Val Arg Pro Arg Pro Phe Gln Pro Arg Gly Glu Asp His		
1	5	10
		15
Asn Ser Lys Leu Leu Phe Val Leu Phe Ala Leu Phe Leu Phe Val Ala		
	20	25
		30
Cys Lys Pro Lys Glu Lys Pro Ser Pro Ala Thr Ser Leu Thr Asp Asp		
	35	40
		45
Ala Leu Met Asp Thr Val Gln Arg Arg Thr Phe Asn Tyr Phe Trp Asp		
	50	55
		60
Ala Ala Glu Pro Asn Ser Gly Leu Ala Arg Glu Arg Tyr His Met Asp		
65	70	75
		80
Gly Glu Tyr Pro Ala Gly Gly Pro Glu Ile Val Thr Ser Gly Gly Ser		

85 90 95
 Gly Phe Gly Ile Met Ala Ile Leu Ala Gly Ile Asp Arg Gly Tyr Val
 100 105 110
 Ser Arg Glu Glu Gly Leu Gln Arg Met Glu Lys Ile Val Gly Phe Leu
 115 120 125
 Glu Lys Ala Asp Arg Phe Lys Gly Ala Tyr Pro His Trp Trp Asn Gly
 130 135 140
 Glu Thr Gly His Val Gln Pro Phe Gly Gln Lys Asp Asn Gly Gly Asp
 145 150 155 160
 Leu Val Glu Thr Ala Phe Leu Met Gln Gly Leu Leu Ala Val His Gln
 165 170 175
 Tyr Tyr Ala Glu Gly Ser Ala Glu Glu Lys Lys Leu Ala Gly Arg Ile
 180 185 190
 Asp Lys Leu Trp Arg Glu Val Asp Trp Asn Trp Tyr Arg His Gly Gly
 195 200 205
 Gln Asn Val Leu Tyr Trp His Trp Ser Pro Glu Tyr Gly Trp Glu Met
 210 215 220
 Asn Phe Pro Val His Gly Tyr Asn Glu Cys Leu Ile Met Tyr Ile Leu
 225 230 235 240
 Ala Ala Ala Ser Pro Thr His Gly Val Pro Ala Ala Val Tyr His Glu
 245 250 255
 Arg Trp Ala Gln Asn Gly Ala Ile Val Ser Pro His Lys Val Glu Gly
 260 265 270
 Ile Glu Leu His Leu Arg Tyr Gln Gly Gly Glu Ala Gly Pro Leu Phe
 275 280 285
 Trp Ala Gln Tyr Ser Phe Leu Gly Leu Asp Pro Val Gly Ala Glu Arg
 290 295 300
 Arg Val Leu Ser Glu Leu Phe
 305 310

<210> 8076

<211> 90

<212> PRT

<213> B.fragilis

<400> 8076

Tyr Ile Asp Pro Cys Thr Val Arg Thr Glu Asp Phe Tyr Asn Phe Asp
 1 5 10 15
 Leu Ile Ile Gly Met Asp Asp Arg Asn Met Asp Asp Leu Lys Glu Lys
 20 25 30
 Ala Pro Ser Pro Ala Glu Trp Lys Ile His Arg Met Thr Glu Tyr
 35 40 45
 Cys Thr Arg Ile Pro Ala Asp His Val Pro Asp Pro Tyr Tyr Gly Gly
 50 55 60
 Ala Glu Gly Phe Glu Tyr Val Leu Asp Ile Leu Glu Asp Ala Cys Ala
 65 70 75 80
 Gly Leu Leu Thr Ser Leu Thr Gln Asp Ser
 85 90

<210> 8077

<211> 112

<212> PRT

<213> B.fragilis

<400> 8077

Leu Gly Asp Pro Cys Gly Thr Leu Val His Ala Asp Phe Tyr Ile Phe
 1 5 10 15
 Ile Phe Arg Leu Thr His Ser Val Ile Tyr Ser Leu Leu Cys Leu Cys
 20 25 30

Leu Cys Asn Ile Cys Arg Phe Tyr Thr Ala Glu Gly Val Met Leu His
 35 40 45
 Pro Ile Asn Asp Ala Gly Leu Glu Arg Glu Leu Val Ile Asp Ser Thr
 50 55 60
 Gly Ile Leu Ala Tyr His Gln Val Glu Leu Thr Asp Ser Arg Met His
 65 70 75 80
 Ala His Ala Val Leu Arg Gly Tyr Glu Leu Ile His Arg Ser Val Tyr
 85 90 95
 Cys Pro Tyr Gly Arg Phe Leu Gln Leu Arg Ser Tyr Asn Arg Tyr Gly
 100 105 110

<210> 8078
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 8078
 Leu Pro Phe Gln Ala Gly Val Val Asn Arg Met Glu His His Ser Phe
 1 5 10 15
 Arg Arg Val Lys Ala Ala Asn Val Ala Glu Ala Lys Ala Lys Lys Ala
 20 25 30
 Val Tyr His Ala Met Gly Gln Ser Lys Tyr Lys Asp Ile Lys Ile Arg
 35 40 45
 Met His Gln Arg Ala Ala Trp Ile Ser Gln Leu Arg Val Ser Ala Cys
 50 55 60
 Gly Ile Ile
 65

<210> 8079
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8079
 Ser Val Cys Leu Thr Cys Ile Val Ala Ala Ser Arg Val Gln Lys Leu
 1 5 10 15
 Ile Ile Lys Lys Val Ser Gly Ser Ile Ile Leu Thr Phe Asn Arg Asn
 20 25 30
 Leu Thr Lys Lys Met Pro Glu Leu Phe Val Pro Val Leu Lys Glu His
 35 40 45
 Gly Val Lys Ser Ser Phe Ser Lys Ser Gly Asp Arg Gly Trp Val
 50 55 60

<210> 8080
 <211> 494
 <212> PRT
 <213> B.fragilis

<400> 8080
 Pro Asp Leu Asn Gly Leu Asn Tyr Ser Leu Ser Glu Phe Lys Asn Ser
 1 5 10 15
 Lys Gly Asp Val Leu Pro Ala Asp Ala Phe Ser Gly Gly Phe Val Arg
 20 25 30
 Tyr Val Met Thr Asp Glu Leu Asn Lys Asp Gly Arg Gly Gly Cys Gly
 35 40 45
 Tyr Arg Pro Asp His Ser Ile Tyr Asp Ser Leu Leu Val Ala Asp Pro
 50 55 60
 Ile Asp His Leu Leu Thr Ser Met Pro Met Glu Ala Lys Ser Thr Gln
 65 70 75 80

Ala	Ile	Trp	Ile	Asn	Cys	Gln	Val	Pro	Gln	Thr	Val	Ser	Pro	Gly	Val
				85					90					95	
Tyr	Arg	Gly	Thr	Val	Glu	Val	Lys	Asp	Gly	Asp	Asn	Arg	Leu	Ser	Thr
			100					105					110		
Leu	Lys	Met	Asp	Ile	Lys	Val	Ser	Ser	Arg	Val	Leu	Pro	Ala	Pro	Ser
		115					120					125			
Gln	Trp	Ala	Phe	His	Leu	Asp	Leu	Trp	Gln	Ser	Pro	Phe	Ala	Val	Ala
	130					135					140				
Arg	Tyr	Tyr	Gln	Val	Pro	Leu	Trp	Ser	Gln	Ala	His	Ile	Asp	Ala	Met
145					150				155						160
Arg	Pro	Val	Met	Lys	Met	Leu	Ala	Asp	Ala	Gly	Gln	Lys	Ile	Ile	Thr
			165					170						175	
Ala	Ser	Ile	Met	His	Lys	Pro	Trp	Asn	Gly	Gln	Thr	Tyr	Asp	Tyr	Phe
		180						185					190		
Glu	Ser	Met	Val	Thr	Trp	Thr	Lys	Lys	Val	Asn	Gly	Thr	Trp	Ala	Phe
	195						200					205			
Asp	Tyr	Asp	Val	Phe	Asp	Lys	Trp	Val	Glu	Met	Met	Met	Ser	Val	Gly
210						215					220				
Ile	Asp	Lys	Gln	Ile	Asn	Cys	Tyr	Ser	Met	Val	Pro	Trp	Lys	Leu	Ser
225					230					235					240
Phe	Gln	Tyr	Phe	Asp	Gln	Ala	Thr	Asn	Ser	Met	Gln	Tyr	Val	Lys	Thr
			245					250						255	
Ala	Pro	Gly	Glu	Lys	Ala	Tyr	Glu	Glu	Met	Trp	Val	Ala	Met	Leu	Lys
		260					265						270		
Ser	Phe	Ser	Lys	His	Leu	Arg	Glu	Lys	Ser	Trp	Phe	Asp	Ile	Cys	Thr
	275						280					285			
Ile	Ala	Met	Asp	Glu	Arg	Pro	Met	Glu	Val	Met	Gln	Lys	Thr	Leu	Gln
290						295					300				
Val	Ile	Arg	Lys	Ala	Asp	Pro	Glu	Phe	Lys	Val	Ser	Leu	Ala	Gly	Asn
305					310					315					320
Phe	His	Lys	Glu	Leu	Glu	Ala	Asp	Ile	Tyr	Asp	Tyr	Cys	Ile	Pro	Ile
			325					330						335	
Gly	Ala	Ser	Tyr	Pro	Ala	Glu	Val	Leu	Ala	Arg	Arg	Ala	Gln	Asn	Asn
		340						345					350		
Leu	Pro	Thr	Thr	Tyr	Tyr	Thr	Cys	Cys	Thr	Glu	Ala	Phe	Pro	Asn	Thr
	355					360						365			
Phe	Thr	Phe	Ser	Asp	Pro	Ala	Glu	Ala	Ala	Trp	Met	Ser	Tyr	Tyr	Ser
	370					375					380				
Ala	Lys	Asp	His	Leu	Asp	Gly	Tyr	Leu	Arg	Trp	Ala	Tyr	Asn	Ser	Trp
385					390				395						400
Pro	Lys	Glu	Pro	Leu	Leu	Asp	Ser	Arg	Phe	Glu	Ala	Trp	Ala	Gly	Gly
			405					410						415	
Asp	Thr	Tyr	Leu	Val	Tyr	Pro	Gly	Ala	Arg	Ser	Ser	Ile	Arg	Phe	Glu
		420					425						430		
Lys	Leu	Ile	Glu	Gly	Val	Gln	Ala	His	Glu	Lys	Ile	Thr	Ile	Leu	Arg
	435						440					445			
Lys	Glu	Phe	Thr	Asp	Lys	Lys	Asn	Lys	Thr	Gly	Phe	Lys	Lys	Leu	Glu
	450					455					460				
Lys	Met	Leu	Ser	Thr	Phe	Asn	Leu	Arg	Asp	Phe	Pro	Glu	Val	Pro	Ala
465					470				475						480
Ala	Glu	Thr	Val	Asn	Lys	Ala	Asn	Lys	Ile	Leu	Asn	Ser	Leu		
			485					490							

<210> 8081

<211> 392

<212> PRT

<213> B.fragilis

<400> 8081

Phe Cys His Asp Leu Pro Ile Leu Thr Gln Ile Met Ala Glu Arg Lys
 1 5 10 15
 Val Arg Val Arg Phe Ala Pro Ser Pro Thr Gly Ala Leu His Ile Gly
 20 25 30
 Gly Val Arg Thr Ala Leu Tyr Asn Tyr Leu Phe Ala Arg Gln His Gly
 35 40 45
 Gly Asp Leu Ile Phe Arg Ile Glu Asp Thr Asp Ser Asn Arg Phe Val
 50 55 60
 Pro Gly Ala Glu Glu Tyr Ile Leu Glu Ser Phe Lys Trp Leu Gly Ile
 65 70 75 80
 Gln Phe Asp Glu Gly Val Ser Phe Gly Gly Glu Tyr Gly Pro Tyr Arg
 85 90 95
 Gln Ser Glu Arg Arg Glu Ile Tyr Lys Lys Tyr Val Gln Val Leu Leu
 100 105 110
 Asp Asn Gly Lys Ala Tyr Ile Ala Phe Asp Thr Pro Glu Glu Leu Tyr
 115 120 125
 Val Lys Arg Ala Glu Met Ala Tyr Leu His Tyr Asp Ala Ser Thr Arg
 130 135 140
 Val Gly Met Arg Asn Ser Met Thr Leu Pro Lys Glu Glu Val Glu Ala
 145 150 155 160
 Leu Ile Ala Asp Gly Lys Gln Tyr Val Val Arg Phe Lys Ile Glu Pro
 165 170 175
 Asn Glu Asp Ile His Val Asn Asp Leu Ile Arg Gly Glu Val Val Ile
 180 185 190
 Asn Ser Ser Ile Leu Asp Asp Lys Val Leu Tyr Lys Ser Ala Asp Glu
 195 200 205
 Leu Pro Thr Tyr His Leu Ala Asn Ile Val Asp Asp His Leu Met Glu
 210 215 220
 Val Ser His Val Ile Arg Gly Glu Glu Trp Leu Pro Ser Ala Pro Leu
 225 230 235 240
 His Val Leu Leu Tyr Arg Ala Phe Gly Trp Glu Asp Thr Met Pro Ala
 245 250 255
 Phe Ala His Leu Pro Leu Leu Leu Lys Pro Glu Gly Asn Gly Lys Leu
 260 265 270
 Ser Lys Arg Asp Gly Asp Arg Leu Gly Phe Pro Val Phe Pro Leu Glu
 275 280 285
 Trp His Asp Pro Lys Ser Gly Glu Ile Ser Ser Gly Tyr Arg Glu Ser
 290 295 300
 Gly Tyr Leu Pro Glu Ala Val Ile Asn Phe Leu Ala Leu Leu Gly Trp
 305 310 315 320
 Asn Pro Gly Asn Asp Gln Glu Val Met Ser Met Asp Glu Leu Ile Arg
 325 330 335
 Leu Phe Asp Leu His Arg Cys Ser Lys Ser Gly Ala Lys Ile Asp Tyr
 340 345 350
 Lys Lys Gly Ile Trp Phe Asn His Thr Tyr Ile Gln Gln Lys Ser Asp
 355 360 365
 Lys Lys Asn Ala Arg Thr Val Cys Thr Gly Ala Glu Arg Ala Trp Ser
 370 375 380
 Lys Lys Phe Leu Phe Lys Lys Trp
 385 390

<210> 8082

<211> 704

<212> PRT

<213> B.fragilis

<400> 8082

Thr Phe Phe Ser Thr Leu Leu Phe Phe Phe Val Leu Phe Ala Lys Asn
 1 5 10 15

Ser Arg Val Met Glu His Trp Lys Lys Lys Asn Ser Phe Ser Tyr Lys
 20 25 30
 Asp Leu Leu Tyr Lys Ala Leu Ile Phe Val Gly Thr Val Ala Phe Ile
 35 40 45
 Val Tyr Phe Leu Pro Arg Asp Gly Lys Phe Asn Tyr Gln Phe Asp Ile
 50 55 60
 Asn Lys Pro Trp Lys Tyr Gly Gln Leu Met Ala Thr Phe Asp Phe Pro
 65 70 75 80
 Ile Tyr Lys Asp Glu Ala Val Val Lys Arg Glu Gln Asp Ser Leu Leu
 85 90 95
 Ala Ser Phe Gln Pro Tyr Phe Glu Leu Asp Lys Glu Val Glu Lys Ser
 100 105 110
 Ala Leu Ala Lys Leu Lys Glu Asn Tyr His Ala His Leu Lys Gly Ile
 115 120 125
 Leu Pro Ser Thr Asp Tyr Ile Arg Tyr Ile Glu Arg Gly Leu Lys Ala
 130 135 140
 Ile Tyr Gln Ser Gly Val Val Ser Thr Glu Glu Met Arg Thr Leu Leu
 145 150 155 160
 His Asp Ser Ile Phe Ser Val Met Val Ile Glu Asp Lys Leu Ala Asn
 165 170 175
 Gln Arg Thr Thr Asp Gly Ile Tyr Thr Val Lys Arg Ala Tyr Glu Asn
 180 185 190
 Leu Ile Ser Gly Asp Thr Ala His Tyr Asn Arg Asp Ile Leu Arg Gln
 195 200 205
 Cys Ala Leu Asn Asp Tyr Ile Thr Pro Asn Leu Ile Tyr Asp Ser Val
 210 215 220
 Arg Thr Glu Thr Ala Arg Lys Glu Leu Leu Asp Asn Tyr Ser Trp Ala
 225 230 235 240
 Asn Gly Val Val Gln Ser Gly Gln Lys Ile Ile Asp Arg Gly Glu Ile
 245 250 255
 Val Asn Lys Gln Thr Tyr Asn Ile Leu Glu Ser Leu Arg Lys Glu Ser
 260 265 270
 Ile Lys Arg Ser Glu Ser Ile Gly Gln Lys Arg Leu Ile Leu Gly Gly
 275 280 285
 Gln Ile Leu Phe Val Gly Ile Leu Ile Leu Cys Phe Met Leu Tyr Leu
 290 295 300
 Glu Leu Phe Arg Lys Asp Tyr Tyr Glu Arg Lys Gly Ser Leu Ser Leu
 305 310 315 320
 Leu Phe Ala Leu Ile Val Phe Tyr Cys Val Ile Thr Ala Leu Met Val
 325 330 335
 Thr Asn Asn Ile Phe Asn Val Tyr Ile Leu Pro Tyr Ala Met Leu Pro
 340 345 350
 Ile Ile Ile Arg Val Phe Leu Asp Ser Arg Thr Ala Phe Leu Thr His
 355 360 365
 Val Ile Thr Ile Leu Ile Cys Ser Ile Thr Leu Arg Tyr Pro His Glu
 370 375 380
 Phe Ile Leu Thr Gln Ile Ala Ala Gly Leu Val Ala Ile Phe Ser Leu
 385 390 395 400
 Arg Glu Leu Ser Gln Arg Ser Gln Leu Phe Arg Thr Ala Leu Leu Val
 405 410 415
 Ile Leu Thr Tyr Ala Ala Ile Tyr Phe Ala Phe Glu Leu Ile Ser Glu
 420 425 430
 Asn Asp Leu Ser Lys Leu Asn Val Ser Met Tyr Ile Tyr Phe Ile Ile
 435 440 445
 Asn Gly Val Leu Leu Leu Phe Ala Tyr Pro Leu Leu Phe Leu Leu Glu
 450 455 460
 Lys Thr Ile Gly Phe Thr Ser Asn Val Thr Leu Val Glu Leu Ser Asn
 465 470 475 480
 Ile Asn Asn Asp Leu Leu Lys Lys Met Ser Glu Thr Gly Pro Gly Thr

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 4400

485 490 495
 Phe Gln His Ser Met Gln Val Ala Asn Leu Ala Ala Glu Ala Ala Ile
 500 505 510
 Arg Ile Gly Ala Lys Arg Gln Leu Val Arg Thr Gly Ala Leu Tyr His
 515 520 525
 Asp Ile Gly Lys Met Glu Asn Pro Ala Phe Phe Thr Glu Asn Gln Ser
 530 535 540
 Gly Val Asn Pro His Lys Asn Leu Ser Tyr Glu Gln Ser Ala Gln Val
 545 550 555 560
 Val Ile Ser His Val Thr Asp Gly Leu Lys Leu Ala Asp Lys His Asn
 565 570 575
 Leu Pro Lys Val Ile Lys Asp Phe Ile Ser Thr His His Gly Arg Gly
 580 585 590
 Lys Thr Lys Phe Phe Tyr Ile Ser Trp Lys Asn Glu His Pro Gly Glu
 595 600 605
 Glu Pro Asn Glu Glu Val Phe Thr Tyr Pro Gly Pro Asn Pro Phe Ser
 610 615 620
 Lys Glu Thr Ala Ile Leu Met Met Ala Asp Ser Val Glu Ala Ala Ser
 625 630 635 640
 Arg Ser Leu Pro Glu Tyr Thr Glu Glu Ser Ile Ser Asn Leu Val Asp
 645 650 655
 Lys Ile Ile Asp Ser Gln Val Gln Glu Gly Tyr Phe Lys Glu Cys Pro
 660 665 670
 Ile Thr Phe Lys Asp Ile Ala Thr Ile Lys Ala Val Phe Lys Glu Lys
 675 680 685
 Leu Lys Thr Ile Tyr His Thr Arg Ile Ser Tyr Pro Glu Leu Lys Lys
 690 695 700

<210> 8083
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 <212> PRT
 <213> B.fragilis

<400> 8083
 Ser Leu Ile Pro Ser Leu Phe Thr Glu His Ser Cys Ala Cys Ser Val
 1 5 10 15
 Pro Ile Ser Lys Gln Tyr Lys Ser Ser Ile Met Asn Phe Ile Trp Tyr
 20 25 30
 Ile Leu Ile Gly Ile Leu Ala Gly Tyr Phe Ala Gly Lys Ile Met Arg
 35 40 45
 Gly Gly Gly Phe Gly Leu Leu Val Asn Leu Leu Leu Gly Ile Ile Gly
 50 55 60
 Gly Val Leu Gly Gly Trp Val Phe Ala Leu Leu Gly Leu Ala Ala Thr
 65 70 75 80
 Gly Ile Ile Gly Ser Leu Ile Thr Ser Val Val Gly Ala Ile Leu Phe
 85 90 95
 Leu Trp Ile Ala Ser Phe Phe Ser Arg Ser Arg
 100 105

<210> 8084
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 8084
 Val Asn Ser Pro Glu Gly Glu Leu Lys Thr Ser Arg Asn Arg Gln Pro
 1 5 10 15
 Arg Thr Lys Thr Leu Phe Phe Glu Gln Met Arg Lys Ala Lys Pro Lys
 20 25 30

Lys Arg Val Ile Leu Pro Asp Pro Val Phe Asn Asp Gln Lys Val Ser
 35 40 45
 Lys Phe Val Asn His Leu Met Tyr Asp Gly Lys Lys Asn Thr Ser Tyr
 50 55 60
 Glu Ile Phe Tyr Ala Ala Leu Glu Thr Val Lys Ala Lys Leu Pro Asn
 65 70 75 80
 Glu Glu Lys Thr Ala Leu Glu Ile Trp Lys Lys Ala Leu Asp Asn Val
 85 90 95
 Thr Pro Gln Val Glu Val Lys Ser Arg Arg Val Gly Gly Ala Thr Phe
 100 105 110
 Gln Val Pro Thr Glu Ile Arg Pro Asp Arg Lys Glu Ser Ile Ser Met
 115 120 125
 Lys Asn Leu Ile Leu Phe Ala Arg Lys Arg Gly Gly Lys Ser Met Ala
 130 135 140
 Asp Lys Leu Ala Ala Glu Ile Met Asp Ala Phe Asn Glu Gln Gly Gly
 145 150 155 160
 Ala Phe Lys Arg Lys Glu Asp Met His Arg Met Ala Glu Ala Asn Arg
 165 170 175
 Ala Phe Ala His Phe Arg Phe
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<210> 8085
 <211> 161
 <212> PRT
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<400> 8085
 Lys Ser Asn Leu Lys Tyr Arg Thr Lys Glu Ser Val Cys Cys Pro Cys
 1 5 10 15
 Ser Leu Glu Arg Ser Val Gly Leu Leu Lys Lys Gln Leu Leu Leu Leu
 20 25 30
 Glu Glu Ile Tyr Ser Asn Tyr Ser Ser Ser Thr Glu Gly Glu Ile Ile
 35 40 45
 Thr Gln Ser His Arg Thr Val Asn Ala Lys Arg Ile Pro Ile Ser Phe
 50 55 60
 Ser Tyr Glu Gly Gly Ile Thr Leu Asp Thr Glu Thr Leu His Tyr Ser
 65 70 75 80
 Ser Pro Ser Glu Lys Phe Ala Thr Thr Trp Lys Asn Ile Leu Phe His
 85 90 95
 Thr Ile Ser Ile Arg Ile Ile Ile Gly Leu His Lys Ser Asn Met Glu
 100 105 110
 Pro Ser Glu Trp Arg Glu Ile Ile His Gln Asn Thr Tyr Gln Lys Phe
 115 120 125
 His Arg Lys His Arg Arg Arg Leu Pro Leu Ser Phe Arg Glu Arg Tyr
 130 135 140
 Thr Gln Tyr Lys Asn Lys Ala Ser Asp Ala Phe Asn Gln Asp Ala Pro
 145 150 155 160
 Lys

<210> 8086
 <211> 147
 <212> PRT
 <213> B.fragilis

<400> 8086
 Phe Thr Gly Leu Arg Met Asn Asn Ile Val Tyr Gly Tyr Thr Ser Glu
 1 5 10 15
 Asp Thr Phe Val Gln Ser Ser Asn Asn Phe Val Ile Val Leu Glu Val


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<211> 167
<212> PRT
<213> B.fragilis
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<210> 8088
<211> 139
<212> PRT
<213> B.fragilis
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Ile Lys Lys Gln Phe Lys Met Pro Thr Ile Gln Gln Leu Val Arg Lys
1      5      10      15
Gly Arg Glu Val Leu Val Glu Lys Ser Lys Ser Pro Ala Leu Asp Ser
20      25      30
Cys Pro Gln Arg Arg Gly Val Cys Val Arg Val Tyr Thr Thr Pro
35      40      45

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Lys Lys Pro Asn Ser Ala Met Arg Lys Val Ala Arg Val Arg Leu Thr
 50 55 60
 Asn Gln Lys Glu Val Asn Ser Tyr Ile Pro Gly Glu Gly His Asn Leu
 65 70 75 80
 Gln Glu His Ser Ile Val Leu Val Arg Gly Gly Arg Val Lys Asp Leu
 85 90 95
 Pro Gly Val Arg Tyr His Ile Val Arg Gly Thr Leu Asp Thr Ala Gly
 100 105 110
 Val Ala Gly Arg Thr Gln Arg Arg Lys Tyr Gly Ala Lys Arg Pro
 115 120 125
 Lys Pro Gly Gln Ala Ala Pro Ala Lys Lys Lys
 130 135

<210> 8089
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 8089
 His Leu Val Lys Glu Ile Ile Phe Val Gln Lys Lys Ile Leu Arg Pro
 1 5 10 15
 Met Lys Asn Ile Asn Tyr Ser Ile Lys Lys Gln Phe Lys Ile Ser Asp
 20 25 30
 Glu Gly Ile Cys Leu Leu Pro Met Leu Leu Arg Ala Leu Cys Arg Leu
 35 40 45
 Thr Lys Lys Thr Ala Val Thr Gly Arg Asn Leu Phe Gln Leu Leu
 50 55 60
 Leu Val His Arg Arg Gly Asn His His Thr Ile Ser Pro Asp Gly Glu
 65 70 75 80
 Cys Lys Lys Asp Pro Asp Phe Phe Phe Val
 85 90

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 <211> 709
 <212> PRT
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<400> 8090
 Arg Lys Lys Lys Met Ala Lys Asn Asp Leu His Leu Thr Arg Asn Ile
 1 5 10 15
 Gly Ile Met Ala His Ile Asp Ala Gly Lys Thr Thr Thr Ser Glu Arg
 20 25 30
 Ile Leu Phe Tyr Thr Gly Leu Thr His Lys Ile Gly Glu Val His Asp
 35 40 45
 Gly Ala Ala Thr Met Asp Trp Met Glu Gln Glu Gln Glu Arg Gly Ile
 50 55 60
 Thr Ile Thr Ser Ala Ala Thr Thr Thr Arg Trp Lys Tyr Ala Gly Asp
 65 70 75 80
 Thr Tyr Lys Ile Asn Leu Ile Asp Thr Pro Gly His Val Asp Phe Thr
 85 90 95
 Ala Glu Val Glu Arg Ser Leu Arg Ile Leu Asp Gly Ala Val Ala Ala
 100 105 110
 Tyr Cys Ala Val Gly Gly Val Glu Pro Gln Ser Glu Thr Val Trp Arg
 115 120 125
 Gln Ala Asp Lys Tyr Asn Val Pro Arg Ile Ala Tyr Val Asn Lys Met
 130 135 140
 Asp Arg Ser Gly Ala Asp Phe Phe Glu Val Val Arg Gln Met Lys Ala
 145 150 155 160
 Val Leu Gly Ala Asn Pro Cys Pro Val Val Ile Pro Ile Gly Ala Glu

				165					170					175	
Glu	Asn	Phe	Lys	Gly	Leu	Val	Asp	Leu	Ile	Lys	Met	Lys	Ala	Ile	Tyr
			180						185				190		
Trp	His	Asp	Glu	Thr	Met	Gly	Ala	Asp	Tyr	Thr	Ile	Glu	Glu	Ile	Pro
		195					200					205			
Ala	Asn	Leu	Val	Asp	Glu	Ala	Asn	Glu	Trp	Arg	Asp	Lys	Met	Leu	Glu
	210				215						220				
Lys	Val	Ala	Glu	Phe	Asp	Asp	Ala	Leu	Met	Glu	Lys	Tyr	Phe	Asp	Asp
	225				230					235				240	
Pro	Ser	Thr	Ile	Thr	Glu	Glu	Glu	Val	Leu	Arg	Ala	Leu	Arg	Asn	Ala
				245					250					255	
Thr	Val	Gln	Met	Ala	Val	Val	Pro	Met	Leu	Cys	Gly	Ser	Ser	Phe	Lys
			260					265					270		
Asn	Lys	Gly	Val	Gln	Thr	Leu	Leu	Asp	Tyr	Val	Cys	Ala	Phe	Leu	Pro
	275						280					285			
Ser	Pro	Leu	Asp	Ala	Glu	Asn	Val	Val	Gly	Thr	Asn	Pro	Asp	Thr	Gly
	290					295					300				
Ala	Glu	Glu	Asp	Arg	Lys	Pro	Ser	Glu	Asp	Asp	Lys	Thr	Ser	Ala	Leu
	305				310					315					320
Ala	Phe	Lys	Ile	Ala	Thr	Asp	Pro	Tyr	Val	Gly	Arg	Leu	Thr	Phe	Phe
				325					330					335	
Arg	Val	Tyr	Ser	Gly	Lys	Ile	Glu	Ala	Gly	Ser	Tyr	Ile	Tyr	Asn	Ser
			340					345					350		
Arg	Ser	Gly	Lys	Lys	Glu	Arg	Val	Ser	Arg	Leu	Phe	Gln	Met	His	Ser
		355					360					365			
Asn	Lys	Gln	Asn	Pro	Val	Glu	Val	Ile	Gly	Ala	Gly	Asp	Ile	Gly	Ala
	370					375					380				
Gly	Val	Gly	Phe	Lys	Asp	Ile	His	Thr	Gly	Asp	Thr	Leu	Cys	Asp	Glu
	385				390					395					400
Thr	Ala	Pro	Ile	Val	Leu	Glu	Ser	Met	Asp	Phe	Pro	Glu	Pro	Val	Ile
				405					410					415	
Gly	Ile	Ala	Val	Glu	Pro	Lys	Thr	Gln	Lys	Asp	Met	Asp	Lys	Leu	Ser
			420					425				430			
Asn	Gly	Leu	Ala	Lys	Leu	Ala	Glu	Glu	Asp	Pro	Thr	Phe	Thr	Val	Lys
	435						440					445			
Thr	Asp	Glu	Gln	Thr	Gly	Gln	Thr	Val	Ile	Ser	Gly	Met	Gly	Glu	Leu
	450				455						460				
His	Leu	Asp	Ile	Ile	Ile	Asp	Arg	Leu	Lys	Arg	Glu	Phe	Lys	Val	Glu
	465				470					475					480
Cys	Asn	Gln	Gly	Lys	Pro	Gln	Val	Asn	Tyr	Lys	Glu	Ala	Ile	Thr	Lys
				485					490					495	
Thr	Val	Asn	Leu	Arg	Glu	Val	Tyr	Lys	Lys	Gln	Ser	Gly	Gly	Arg	Gly
			500					505				510			
Lys	Phe	Ala	Asp	Ile	Ile	Val	Asn	Ile	Gly	Pro	Val	Asp	Glu	Asp	Phe
	515						520					525			
Thr	Gln	Gly	Gly	Leu	Gln	Phe	Val	Asp	Glu	Val	Lys	Gly	Gly	Asn	Ile
	530				535						540				
Pro	Lys	Glu	Phe	Ile	Pro	Ser	Val	Gln	Lys	Gly	Phe	Gln	Thr	Ala	Met
	545				550					555					560
Lys	Asn	Gly	Val	Leu	Ala	Gly	Tyr	Pro	Leu	Asp	Ser	Leu	Lys	Val	Thr
				565					570					575	
Leu	Val	Asp	Gly	Ser	Phe	His	Pro	Gly	Asp	Ser	Asp	Gln	Leu	Ser	Phe
		580						585				590			
Glu	Ile	Cys	Ala	Ile	Gln	Ala	Tyr	Lys	Asn	Ala	Cys	Ala	Lys	Ala	Gly
	595						600				605				
Pro	Val	Leu	Met	Glu	Pro	Ile	Met	Lys	Leu	Glu	Val	Val	Thr	Pro	Glu
	610					615					620				
Glu	Asn	Met	Gly	Asp	Val	Ile	Gly	Asp	Leu	Asn	Lys	Arg	Arg	Gly	Gln
	625				630				635						640

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Val Glu Gly Met Glu Ser Ser Arg Ser Gly Ala Arg Ile Val Lys Ala
645 650 655
Met Val Pro Leu Ala Glu Met Phe Gly Tyr Val Thr Ala Leu Arg Thr
660 665 670
Ile Thr Ser Gly Arg Ala Thr Ser Ser Met Val Tyr Ser His His Ala
675 680 685
Gln Val Ser Ser Ser Ile Ala Lys Ala Val Leu Glu Glu Val Lys Gly
690 695 700
Arg Ala Asp Leu Leu
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<210> 8091
<211> 105
<212> PRT
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<400> 8091
Leu Lys Glu Leu Met Ser Gln Lys Ile Arg Ile Lys Leu Lys Ser Tyr
1 5 10 15
Asp His Asn Leu Val Asp Lys Ser Ala Glu Lys Ile Val Arg Thr Val
20 25 30
Lys Ala Thr Gly Ala Ile Val Ser Gly Pro Ile Pro Leu Pro Thr His
35 40 45
Lys Arg Ile Phe Thr Val Asn Arg Ser Thr Phe Val Asn Lys Lys Ser
50 55 60
Arg Glu Gln Phe Glu Leu Ser Ser Phe Lys Arg Leu Ile Asp Ile Tyr
65 70 75 80
Ser Ser Thr Ala Lys Thr Val Asp Ala Leu Met Lys Leu Glu Leu Pro
85 90 95
Ser Gly Val Glu Val Glu Ile Lys Val
100 105

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<211> 87
<212> PRT
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<400> 8092
Phe Met Gly Ser Gly Asn Ala Lys Phe Leu Val Gly Leu Gly Ile Gly
1 5 10 15
Ser Ala Ile Gly Ala Leu Val Tyr His Phe Ser Arg Thr Ala Lys Ala
20 25 30
Lys Lys Leu Lys Asn Asp Val Phe Asn Ala Leu His Glu Ile Glu Ala
35 40 45
Asp Ala Glu Leu Ala Val Val Glu Ala Lys Asp Lys Ala Val Lys Ala
50 55 60
Gly Ala Lys Val Ala Gly Lys Val Ala Asp Lys Ala Thr Glu Val Lys
65 70 75 80
Glu Lys Leu Thr Pro Asn Ser
85

<210> 8093
<211> 382
<212> PRT
<213> B.fragilis

<400> 8093
Ile Asn Tyr Ile Met Glu Leu Lys Lys Lys Glu Asn Ile Gly Trp Ile
1 5 10 15

Asp Leu Leu Arg Val Leu Ala Cys Phe Phe Val Val Phe Ser His Ser
 20 25 30
 Cys Asp Ala Phe Ile Gly Gln Phe Asp Ala Asn Arg Glu Ser Phe Leu
 35 40 45
 Thr Gly Val Phe Leu Gly Ser Leu Met Arg Pro Cys Val Pro Ile Phe
 50 55 60
 Val Met Met Thr Gly Val Leu Leu Leu Pro Val Gln Thr Asp Met Ala
 65 70 75 80
 Ala Phe Tyr Lys Lys Arg Ile Gly Arg Leu Ile Pro Pro Met Ile Phe
 85 90 95
 Trp Ser Leu Val Leu Pro Val Leu Tyr Phe Ile Tyr Leu Asn Tyr Ile
 100 105 110
 Asn Pro Asp Thr Gln Asn Pro Leu Ile Ser Met Pro Asp His Ser Leu
 115 120 125
 Glu Ala Leu Trp Phe Lys Leu Tyr Thr Phe Ile Phe Asn Phe Asn Phe
 130 135 140
 Asp Thr Val Pro Leu Trp Tyr Leu Tyr Met Leu Ile Gly Leu Tyr Leu
 145 150 155 160
 Ile Met Pro Ile Ile Ser Gly Trp Leu Glu Lys Val Ser Lys Lys Glu
 165 170 175
 Leu Lys Leu Phe Leu Gly Ile Trp Gly Ile Ser Leu Ile Ala Pro Tyr
 180 185 190
 Val Lys Met Phe Ala Pro Ala Leu Gly Tyr Gln Gly Asn Tyr Gly Asn
 195 200 205
 Met Gly Leu Trp Gly Val Cys Asp Trp Asn Asp Tyr Gly Thr Phe Tyr
 210 215 220
 Tyr Phe Ser Gly Phe Ile Gly Tyr Leu Leu Leu Ala Tyr Tyr Leu Thr
 225 230 235 240
 Lys Tyr Pro Leu Lys Trp Ser Trp Lys Lys Leu Leu Ser Ile Thr Ile
 245 250 255
 Pro Met Phe Leu Thr Gly Tyr Leu Ile Thr Ser Tyr Gly Tyr Val Ile
 260 265 270
 Thr Gln Asn Tyr Phe Pro Gly Asn Tyr Ala Tyr Leu Glu Ile Val Trp
 275 280 285
 Tyr Phe Ala Gly Ile Asn Val Phe Met Met Thr Phe Pro Val Phe Val
 290 295 300
 Ile Val Gln Lys Ile Lys Val Pro Ser Asn His Arg Leu Ser His Met
 305 310 315 320
 Ala Ser Leu Ala Phe Gly Ile Tyr Leu Ser His Tyr Val Phe Val Phe
 325 330 335
 Ile Ala Tyr Asp Leu Leu Asp Thr Glu Leu Leu Pro Tyr Thr Val Arg
 340 345 350
 Ile Ile Cys Met Ala Cys Ile Val Phe Leu Thr Cys Tyr Ala Ile Val
 355 360 365
 Trp Leu Met Ser Lys Ser Lys Leu Thr Asn Arg Phe Ile Arg
 370 375 380

<210> 8094

<211> 1437

<212> PRT

<213> B.fragilis

<400> 8094

Leu Ile Ser Ile Leu Tyr Asn Tyr Lys Ser Met Ala Phe Arg Lys Glu
 1 5 10 15
 Asn Lys Ile Lys Ser Asn Phe Ser Lys Ile Ser Ile Gly Leu Ala Ser
 20 25 30
 Pro Glu Glu Ile Leu Glu Asn Ser Ser Gly Glu Val Leu Lys Pro Glu
 35 40 45

Thr	Ile	Asn	Tyr	Arg	Thr	Tyr	Lys	Pro	Glu	Arg	Asp	Gly	Leu	Phe	Cys
50					55					60					
Glu	Arg	Ile	Phe	Gly	Pro	Ile	Lys	Asp	Tyr	Glu	Cys	His	Cys	Gly	Lys
65					70					75					80
Tyr	Lys	Arg	Ile	Arg	Tyr	Lys	Gly	Ile	Val	Cys	Asp	Arg	Cys	Gly	Val
				85					90					95	
Glu	Val	Thr	Glu	Lys	Lys	Val	Arg	Arg	Glu	Arg	Met	Gly	His	Ile	Gln
			100					105					110		
Leu	Val	Val	Pro	Val	Ala	His	Ile	Trp	Tyr	Phe	Arg	Ser	Leu	Pro	Asn
		115					120					125			
Lys	Ile	Gly	Tyr	Leu	Leu	Gly	Leu	Pro	Thr	Lys	Lys	Leu	Asp	Ser	Ile
	130					135					140				
Ile	Tyr	Tyr	Glu	Arg	Tyr	Val	Val	Ile	Gln	Pro	Gly	Val	Lys	Ala	Glu
145					150					155					160
Asp	Gly	Ile	Ala	Glu	Phe	Asp	Leu	Leu	Ser	Glu	Glu	Glu	Tyr	Leu	Asp
				165					170						175
Ile	Leu	Asp	Thr	Leu	Pro	Lys	Asp	Asn	Gln	Tyr	Leu	Glu	Asp	Thr	Asp
			180					185					190		
Pro	Asn	Lys	Phe	Ile	Ala	Lys	Met	Gly	Ala	Glu	Ala	Ile	Tyr	Asp	Leu
		195					200					205			
Leu	Ala	Arg	Leu	Asp	Leu	Asp	Ala	Leu	Ser	Tyr	Glu	Leu	Arg	His	Arg
	210					215					220				
Ala	Gly	Asn	Asp	Ala	Ser	Gln	Gln	Arg	Lys	Asn	Glu	Ala	Leu	Lys	Arg
225						230				235					240
Leu	Gln	Val	Val	Glu	Ser	Phe	Arg	Ala	Ser	Arg	Gly	Arg	Asn	Lys	Pro
				245					250					255	
Glu	Trp	Met	Ile	Val	Arg	Ile	Val	Pro	Val	Ile	Pro	Pro	Glu	Leu	Arg
			260					265					270		
Pro	Leu	Val	Pro	Leu	Asp	Gly	Gly	Arg	Phe	Ala	Thr	Ser	Asp	Leu	Asn
		275					280					285			
Asp	Leu	Tyr	Arg	Arg	Val	Ile	Ile	Arg	Asn	Asn	Arg	Leu	Lys	Arg	Leu
	290					295				300					
Ile	Glu	Ile	Lys	Ala	Pro	Glu	Val	Ile	Leu	Arg	Asn	Glu	Lys	Arg	Met
305					310					315					320
Leu	Gln	Glu	Ser	Val	Asp	Ser	Leu	Phe	Asp	Asn	Ser	Arg	Lys	Ser	Ser
				325					330					335	
Ala	Val	Lys	Thr	Asp	Ala	Asn	Arg	Pro	Leu	Lys	Ser	Leu	Ser	Asp	Ser
			340					345					350		
Leu	Lys	Gly	Lys	Gln	Gly	Arg	Phe	Arg	Gln	Asn	Leu	Leu	Gly	Lys	Arg
		355					360					365			
Val	Asp	Tyr	Ser	Ala	Arg	Ser	Val	Ile	Val	Val	Gly	Pro	Glu	Leu	Arg
	370					375					380				
Met	His	Glu	Cys	Gly	Ile	Pro	Lys	Leu	Met	Ala	Ala	Glu	Leu	Tyr	Lys
385					390					395					400
Pro	Phe	Ile	Ile	Arg	Lys	Leu	Ile	Glu	Arg	Gly	Ile	Val	Lys	Thr	Val
				405					410						415
Lys	Ser	Ala	Lys	Lys	Ile	Val	Asp	Arg	Lys	Glu	Pro	Val	Ile	Trp	Asp
			420					425					430		
Ile	Leu	Glu	His	Val	Met	Lys	Gly	His	Pro	Val	Leu	Leu	Asn	Arg	Ala
	435						440					445			
Pro	Thr	Leu	His	Arg	Leu	Gly	Ile	Gln	Ala	Phe	Gln	Pro	Lys	Met	Ile
	450					455					460				
Glu	Gly	Lys	Ala	Ile	Gln	Leu	His	Pro	Leu	Ala	Cys	Thr	Ala	Phe	Asn
465					470					475					480
Ala	Asp	Phe	Asp	Gly	Asp	Gln	Met	Ala	Val	His	Leu	Pro	Leu	Ser	Asn
				485					490					495	
Glu	Ala	Val	Leu	Glu	Ala	Gln	Met	Leu	Met	Leu	Ala	Ser	His	Asn	Ile
			500					505					510		
Leu	Asn	Pro	Ala	Asn	Gly	Ala	Pro	Ile	Thr	Val	Pro	Ser	Gln	Asp	Met

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Val	Leu	Gly	Leu	Tyr	Tyr	Ile	Thr	Lys	Leu	Arg	Lys	Gly	Ala	Lys	Gly
530						535					540				
Glu	Gly	Leu	Thr	Phe	Tyr	Gly	Pro	Glu	Glu	Ala	Leu	Ile	Ala	Tyr	Asn
545					550					555					560
Glu	Gly	Lys	Val	Asp	Ile	His	Ala	Pro	Val	Lys	Val	Ile	Val	Lys	Asp
				565					570						575
Leu	Asp	Glu	Asn	Gly	Asn	Ile	Val	Asp	Val	Met	Arg	Glu	Thr	Ser	Val
			580					585							590
Gly	Arg	Val	Ile	Val	Asn	Glu	Ile	Val	Pro	Pro	Glu	Val	Gly	Tyr	Ile
		595					600					605			
Asn	Thr	Ile	Ile	Ser	Lys	Lys	Ser	Leu	Arg	Asp	Ile	Ile	Ser	Ala	Val
610						615					620				
Ile	Lys	Ala	Cys	Gly	Val	Ala	Arg	Thr	Ala	Asp	Phe	Leu	Asp	Gly	Ile
625					630					635					640
Lys	Asn	Leu	Gly	Tyr	Lys	Met	Ala	Phe	Gln	Gly	Gly	Leu	Ser	Phe	Asn
			645						650						655
Leu	Gly	Asp	Ile	Ile	Ile	Pro	Lys	Glu	Lys	Glu	Thr	Leu	Val	Gln	Arg
		660						665							670
Gly	Tyr	Glu	Glu	Val	Glu	Gln	Val	Ile	Ser	Asn	Tyr	Asn	Met	Gly	Phe
	675						680					685			
Ile	Thr	Asn	Asn	Glu	Arg	Tyr	Asn	Gln	Val	Ile	Asp	Ile	Trp	Thr	His
690						695					700				
Val	Asn	Ser	Glu	Leu	Ser	Asn	Ile	Leu	Met	Lys	Thr	Ile	Ser	Ser	Asp
705					710					715					720
Asp	Gln	Gly	Phe	Asn	Ser	Val	Tyr	Met	Met	Leu	Asp	Ser	Gly	Ala	Arg
			725						730						735
Gly	Ser	Lys	Glu	Gln	Ile	Arg	Gln	Leu	Ser	Gly	Met	Arg	Gly	Leu	Met
		740					745								750
Ala	Lys	Pro	Gln	Lys	Ala	Gly	Ala	Glu	Gly	Gly	Gln	Ile	Ile	Glu	Asn
	755					760						765			
Pro	Ile	Leu	Ser	Asn	Phe	Lys	Glu	Gly	Leu	Ser	Val	Leu	Glu	Tyr	Phe
770						775					780				
Ile	Ser	Thr	His	Gly	Ala	Arg	Lys	Gly	Leu	Ala	Asp	Thr	Ala	Leu	Lys
785				790						795					800
Thr	Ala	Asp	Ala	Gly	Tyr	Leu	Thr	Arg	Arg	Leu	Val	Asp	Val	Ser	His
			805						810						815
Asp	Val	Ile	Ile	Asn	Glu	Glu	Asp	Cys	Gly	Thr	Leu	Arg	Gly	Leu	Val
		820					825						830		
Cys	Thr	Asp	Leu	Lys	Asn	Asn	Asp	Glu	Val	Ile	Ala	Thr	Leu	Tyr	Glu
	835						840					845			
Arg	Ile	Leu	Gly	Arg	Val	Ser	Val	His	Asp	Ile	Ile	His	Pro	Gln	Thr
850						855					860				
Gly	Glu	Leu	Leu	Val	Ala	Gly	Gly	Glu	Glu	Ile	Thr	Glu	Asp	Ile	Ala
865				870						875					880
Lys	Lys	Ile	Gln	Glu	Ser	Pro	Ile	Glu	Ser	Val	Glu	Ile	Arg	Ser	Val
			885						890						895
Leu	Thr	Cys	Glu	Ser	Lys	Lys	Gly	Val	Cys	Ala	Lys	Cys	Tyr	Gly	Arg
		900						905							910
Asn	Leu	Ala	Thr	Asn	His	Met	Val	Gln	Lys	Gly	Glu	Ala	Val	Gly	Val
	915						920					925			
Ile	Ala	Ala	Gln	Ser	Ile	Gly	Glu	Pro	Gly	Thr	Gln	Leu	Thr	Leu	Arg
930						935						940			
Thr	Phe	His	Ala	Gly	Gly	Thr	Ala	Ala	Asn	Ile	Ala	Ala	Asn	Ala	Ser
945				950						955					960
Ile	Val	Ala	Lys	Asn	Asn	Ala	Arg	Leu	Glu	Phe	Glu	Glu	Leu	Arg	Thr
			965						970						975
Val	Asp	Ile	Val	Asp	Glu	Thr	Gly	Glu	Ala	Ala	Lys	Val	Val	Val	Gly
		980						985							990

Arg Leu Ala Glu Val Arg Phe Ile Asp Val Asn Thr Gly Ile Val Leu
 995 1000 1005
 Ser Thr His Asn Val Pro Tyr Gly Ser Thr Leu Tyr Val Ala Asp Gly
 1010 1015 1020
 Glu Val Val Glu Lys Gly Lys Leu Ile Ala Lys Trp Asp Pro Phe Asn
 1025 1030 1035 1040
 Ala Val Ile Ile Thr Glu Ala Thr Gly Lys Ile Glu Phe Glu Gly Val
 1045 1050 1055
 Ile Glu Asn Val Thr Tyr Lys Ile Glu Ser Asp Glu Ala Thr Gly Leu
 1060 1065 1070
 Arg Glu Ile Ile Ile Ile Glu Ser Lys Asp Lys Thr Lys Val Pro Ser
 1075 1080 1085
 Ala His Ile Leu Thr Glu Asp Gly Asp Leu Ile Arg Thr Tyr Asn Leu
 1090 1095 1100
 Pro Val Gly Gly His Val Val Ile Glu Asn Gly Gln Lys Val Lys Ala
 1105 1110 1115 1120
 Gly Glu Val Ile Val Lys Ile Pro Arg Ala Val Gly Lys Ala Gly Asp
 1125 1130 1135
 Ile Thr Gly Gly Leu Pro Arg Val Thr Glu Leu Phe Glu Ala Arg Asn
 1140 1145 1150
 Pro Ser Asn Pro Ala Val Val Ser Glu Ile Asp Gly Glu Val Thr Met
 1155 1160 1165
 Gly Lys Val Lys Arg Gly Asn Arg Glu Ile Ile Val Thr Ser Lys Thr
 1170 1175 1180
 Gly Glu Val Lys Lys Tyr Leu Val Pro Leu Ser Lys Gln Ile Leu Val
 1185 1190 1195 1200
 Gln Glu Asn Asp Tyr Val Arg Ala Gly Thr Pro Leu Ser Asp Gly Ala
 1205 1210 1215
 Thr Thr Pro Ala Asp Ile Leu Ala Ile Lys Gly Pro Thr Ala Val Gln
 1220 1225 1230
 Glu Tyr Ile Val Asn Glu Val Gln Asp Val Tyr Arg Leu Gln Gly Val
 1235 1240 1245
 Lys Ile Asn Asp Lys His Phe Glu Ile Ile Val Arg Gln Met Met Arg
 1250 1255 1260
 Lys Val Thr Ile Asp Glu Pro Gly Asp Thr Arg Phe Leu Glu Gln Gln
 1265 1270 1275 1280
 Val Val Asp Lys Leu Glu Phe Met Glu Glu Asn Asp Arg Ile Trp Gly
 1285 1290 1295
 Lys Lys Val Val Val Asp Ala Gly Asp Ser Glu Asn Leu Lys Ala Gly
 1300 1305 1310
 Gln Ile Val Thr Ala Arg Lys Leu Arg Asp Glu Asn Ser Met Leu Lys
 1315 1320 1325
 Arg Arg Asp Leu Lys Pro Val Glu Val Arg Asp Ala Val Ala Ala Thr
 1330 1335 1340
 Ser Thr Gln Ile Leu Gln Gly Ile Thr Arg Ala Ala Leu Gln Thr Ser
 1345 1350 1355 1360
 Ser Phe Met Ser Ala Ala Ser Phe Gln Glu Thr Thr Lys Val Leu Asn
 1365 1370 1375
 Glu Ala Ala Ile Asn Gly Lys Ile Asp Lys Leu Glu Gly Met Lys Glu
 1380 1385 1390
 Asn Val Ile Cys Gly His Leu Ile Pro Ala Gly Thr Gly Leu Arg Glu
 1395 1400 1405
 Phe Asp Lys Ile Ile Val Gly Ser Lys Glu Glu Tyr Asp Arg Ile Leu
 1410 1415 1420
 Ala Asn Lys Lys Thr Val Leu Asp Tyr Asn Glu Val Glu
 1425 1430 1435

<210> 8095

<211> 110

<212> PRT
 <213> B.fragilis

<400> 8095

Asn	Gln	Ser	Ile	Ile	Lys	Asp	Met	Glu	Asn	Gln	Asn	Pro	Asp	Asn	Gln
1			5					10					15		
Leu	Gln	Ile	Glu	Leu	Lys	Glu	Glu	Val	Ala	Gln	Gly	Thr	Tyr	Ala	Asn
		20					25					30			
Leu	Ala	Ile	Ile	Thr	His	Ser	Ser	Glu	Phe	Val	Leu	Asp	Phe	Val	
		35				40					45				
Arg	Val	Leu	Pro	Gly	Leu	Pro	Lys	Ala	Gly	Val	Gln	Ser	Arg	Val	Ile
	50				55						60				
Leu	Ala	Pro	Glu	His	Ala	Lys	Arg	Leu	Gln	Arg	Ala	Leu	Glu	Glu	Asn
65				70					75					80	
Ile	Ala	Lys	Tyr	Glu	Arg	Ala	Phe	Gly	Pro	Ile	Arg	Leu	Gln	Glu	Asp
			85					90					95		
Gly	Val	Asp	Thr	Pro	Pro	Ile	Leu	Asp	Ile	Lys	Gly	Glu	Ala		
		100					105						110		

<210> 8096
 <211> 125
 <212> PRT
 <213> B.fragilis

<400> 8096

Tyr	Leu	Lys	Ile	Ser	Glu	Met	Pro	Gly	Leu	Leu	Gly	Lys	Lys	Ile	Gly
1			5					10						15	
Met	Thr	Ser	Val	Phe	Ser	Ala	Asp	Gly	Lys	Asn	Val	Pro	Cys	Thr	Val
		20					25					30			
Ile	Glu	Ala	Gly	Pro	Cys	Val	Val	Thr	Gln	Val	Lys	Thr	Val	Glu	Lys
		35				40					45				
Asp	Gly	Tyr	Ala	Ala	Val	Gln	Leu	Gly	Phe	Gln	Asp	Lys	Lys	Glu	Lys
	50				55					60					
His	Thr	Thr	Lys	Pro	Leu	Met	Gly	His	Phe	Lys	Lys	Ala	Gly	Val	Thr
65			70					75						80	
Pro	Lys	Arg	His	Leu	Ala	Glu	Phe	Lys	Glu	Phe	Glu	Asn	Glu	Leu	Asn
			85					90					95		
Leu	Gly	Asp	Thr	Val	Thr	Val	Glu	Leu	Phe	Asp	Gly	Ala	Asp	Tyr	Val
		100					105						110		
Asp	Val	Val	Gly	Leu	Leu	Lys	Val	Lys	Ala	Phe	Arg	Val			
		115				120						125			

<210> 8097
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 8097

Leu	His	Thr	Phe	Asn	Leu	Ala	Thr	Ala	Phe	Val	Gln	Val	Thr	Asp	Asn
1			5					10						15	
Val	Thr	His	Val	Phe	Phe	Arg	Ser	Asn	Asp	Phe	Gln	Leu	His	Asp	Arg
		20					25					30			
Leu	His	Gln	Tyr	Arg	Thr	Cys	Leu	Ser	Thr	Ser	Ile	Leu	Ile	Cys	Leu
		35				40					45				
Asp	Ser	Thr	Asp	Phe	Glu	Arg	Gln	Leu	Val	Arg	Val	Thr	Arg	Val	Glu
	50					55					60				

<210> 8098
 <211> 276

<212> PRT
 <213> B.fragilis

<400> 8098

Phe	Val	Ser	Leu	Ile	Leu	Asn	Phe	Ile	Lys	Lys	Tyr	Lys	Glu	Leu	Asp
1				5					10					15	
Ala	Glu	Leu	Lys	Arg	Lys	Lys	Phe	Ala	Ile	Thr	Ile	Gly	Asp	Glu	Leu
			20					25					30		
Pro	Ala	Gly	Ile	Ile	Gln	Met	Ala	Lys	Val	Tyr	Ile	Ala	Lys	Lys	Arg
		35					40					45			
Lys	Ile	Gly	Val	Gly	Asp	Lys	Met	Ala	Gly	Arg	His	Gly	Asn	Lys	Gly
	50					55					60				
Ile	Val	Ser	Arg	Val	Val	Arg	Gln	Glu	Asp	Met	Pro	Phe	Leu	Glu	Asp
65					70				75					80	
Gly	Thr	Pro	Val	Asp	Ile	Val	Leu	Asn	Pro	Leu	Gly	Val	Pro	Ser	Arg
				85				90						95	
Met	Asn	Ile	Gly	Gln	Ile	Phe	Glu	Ala	Val	Leu	Gly	Arg	Ala	Gly	Lys
			100					105					110		
Asn	Leu	Gly	Val	Lys	Phe	Ala	Thr	Pro	Ile	Phe	Asp	Gly	Ala	Thr	Leu
		115					120					125			
Asp	Asp	Leu	Asn	Glu	Trp	Thr	Asp	Lys	Ala	Gly	Leu	Pro	Arg	Tyr	Cys
	130					135					140				
Lys	Thr	Tyr	Leu	Cys	Asp	Gly	Gly	Thr	Gly	Glu	Arg	Phe	Asp	Gln	Pro
145				150						155				160	
Ala	Thr	Val	Gly	Val	Thr	Tyr	Met	Leu	Lys	Leu	Gly	His	Met	Val	Glu
				165					170					175	
Asp	Lys	Met	His	Ala	Arg	Ser	Ile	Gly	Pro	Tyr	Ser	Leu	Ile	Thr	Gln
			180					185					190		
Gln	Pro	Leu	Gly	Gly	Lys	Ala	Gln	Phe	Gly	Gly	Gln	Arg	Phe	Gly	Glu
		195					200					205			
Met	Glu	Val	Trp	Ala	Leu	Glu	Gly	Phe	Gly	Ala	Ser	His	Ile	Leu	Gln
	210					215					220				
Glu	Ile	Leu	Thr	Ile	Lys	Ser	Asp	Asp	Val	Val	Gly	Arg	Ser	Lys	Ala
225					230					235				240	
Tyr	Glu	Ala	Ile	Val	Lys	Gly	Glu	Pro	Met	Pro	Gln	Pro	Gly	Ile	Pro
				245					250					255	
Glu	Ser	Leu	Asn	Val	Leu	Leu	His	Glu	Leu	Arg	Gly	Leu	Gly	Leu	Ser
			260					265					270		
Ile	Asn	Leu	Glu												
			275												

<210> 8099
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 8099

Arg	Asn	Glu	Phe	Leu	Arg	Asn	Val	Thr	Thr	Leu	His	Phe	Ile	Asn	Glu
1				5					10					15	
Leu	Gln	Thr	Thr	Leu	Ser	Lys	Val	Phe	Ile	Asn	Arg	Ala	Asp	Val	His
			20					25					30		
Asn	Asn	Ile	Ser	Glu	Leu	Thr	Thr	Thr	Arg	Leu	Phe	Leu	Ile	Asn	
		35					40				45				
Leu	Thr	Gln	Val	Asn	Cys	Leu	Ser	Asp	Ser	Leu	Phe	Val	Val	Asn	Leu
	50					55					60				
Arg	Phe	Thr	Leu	Val	Thr	Phe	Tyr	Phe	Glu	Phe	Thr	Phe	Gln	Thr	Val
65					70					75				80	
Asp	Asn	Asp	Ile	Gln	Val	Lys	Leu	Thr	His	Thr	Gly	Asn	Asn	Cys	Leu
				85					90					95	

Thr Cys Leu Phe Val Ser Phe His Cys Glu Cys Arg Val Phe Phe Ser
 100 105 110
 Gln Phe Ser Gln Thr Val Arg Gln Phe Val His Ile Leu Leu Ser Phe
 115 120 125
 Arg Phe His Ser Asn Thr Asp Tyr Arg Phe Arg Glu Val His
 130 135 140

<210> 8100

<211> 95

<212> PRT

<213> B.fragilis

<400> 8100

Ile Arg Ser Ser Ile Thr Lys Glu Val Leu Gly Ser Ser Pro Glu Phe
 1 5 10 15
 Gly Ser Ser Gln Lys Arg Tyr Cys Gly Phe Ser Ala Met Ala Arg Ala
 20 25 30
 Met Ala Thr Arg Phe Cys Ile Pro Pro Leu Ile Ser Pro Gly Asn Leu
 35 40 45
 Ser Leu Ala Ser Val Arg Leu Thr Arg Ser Arg Gln Asn Ile Ala Arg
 50 55 60
 Leu Val Cys Ser Arg Lys Val Ser Val Pro Asn Met Leu Ser Gly Asn
 65 70 75 80
 Ile Thr Leu Ser Lys Thr Asp Met Glu Ser Asn Asn Ala Ala Leu
 85 90 95

<210> 8101

<211> 132

<212> PRT

<213> B.fragilis

<400> 8101

Gln Arg Leu Leu Lys Cys Leu Asn Leu Phe Gly Met Ala Lys Ile Lys
 1 5 10 15
 Thr Glu Lys Gln Tyr Lys Ala Ala Cys Ser Arg Ile Glu Glu Leu Leu
 20 25 30
 Lys Val Val Ser Asn Asp Thr Pro Thr Asp Asp Lys Asn Phe Leu Glu
 35 40 45
 Leu Asp Leu Ile Ser Asp Leu Val Ala Asp Tyr Glu Glu Glu His Phe
 50 55 60
 Pro Ile Glu Ala Pro Ser Leu Val Asp Val Ile Lys Leu Arg Met Tyr
 65 70 75 80
 Glu Met Gly Leu Thr Gln Thr Lys Leu Ser Glu Leu Leu Asn Val Ser
 85 90 95
 Pro Ser Arg Ile Ser Glu Tyr Leu Ser Gly Lys Cys Glu Pro Thr Leu
 100 105 110
 Lys Val Ala Arg Glu Ile Ser Arg Lys Leu Asn Ile Asp Ala Asn Ile
 115 120 125
 Val Leu Gly Val
 130

<210> 8102

<211> 495

<212> PRT

<213> B.fragilis

<400> 8102

Thr His Ser Pro Met Ser Phe Ile Ala Asp Lys Ile Val Met Asp Gly
 1 5 10 15

Leu Thr Tyr Asp Asp Val Leu Leu Ile Pro Ala Tyr Ser Glu Val Leu
 20 25 30
 Pro Arg Thr Val Asp Leu Ser Thr Lys Phe Ser Arg Asn Ile Glu Leu
 35 40 45
 Lys Ile Pro Phe Val Thr Ala Ala Met Asp Thr Val Thr Glu Ala Lys
 50 55 60
 Met Ala Ile Ala Ile Ala Arg Glu Gly Gly Ile Gly Val Ile His Lys
 65 70 75 80
 Asn Met Ser Ile Lys Glu Gln Ala Lys Gln Val Ala Thr Val Lys Arg
 85 90 95
 Ala Glu Asn Gly Met Ile Tyr Asp Pro Val Thr Ile Lys Gln Gly Ser
 100 105 110
 Thr Val Arg Asp Ala Leu Ala Leu Met Ala Glu Tyr Lys Ile Gly Gly
 115 120 125
 Ile Pro Val Val Asp Asp Asn Arg Tyr Leu Val Gly Ile Val Thr Asn
 130 135 140
 Arg Asp Leu Arg Phe Glu Arg Asn Met Asp Lys Arg Ile Asp Glu Val
 145 150 155 160
 Met Thr Lys Glu Asn Leu Val Thr Thr Asn Gln Ser Thr Asp Leu Glu
 165 170 175
 Ala Ala Ser Gln Ile Leu Gln Tyr His Lys Ile Glu Lys Leu Pro Val
 180 185 190
 Val Asp Lys Glu Gly Lys Leu Ile Gly Leu Val Thr Tyr Lys Asp Ile
 195 200 205
 Thr Lys Ala Lys Asp Lys Pro Met Ala Cys Lys Asp Ser Lys Gly Arg
 210 215 220
 Leu Arg Val Ala Ala Gly Val Gly Val Thr Ala Asp Thr Phe Asp Arg
 225 230 235 240
 Met Gln Ala Leu Val Asp Ala Gly Ala Asp Ala Ile Val Ile Asp Thr
 245 250 255
 Ala His Gly His Ser Lys Gly Val Ile Asp Thr Leu Arg Glu Ala Lys
 260 265 270
 Lys Arg Tyr Pro Asp Ile Asp Ile Val Val Gly Asn Ile Ala Thr Gly
 275 280 285
 Asp Ala Ala Lys Ala Leu Val Glu Ala Gly Ala Asp Gly Val Lys Val
 290 295 300
 Gly Ile Gly Pro Gly Ser Ile Cys Thr Thr Arg Val Val Ala Gly Val
 305 310 315 320
 Gly Val Pro Gln Leu Ser Ala Val Tyr Asp Val Ala Lys Ala Leu Lys
 325 330 335
 Gly Thr Gly Ile Pro Leu Ile Ala Asp Gly Gly Leu Arg Tyr Ser Gly
 340 345 350
 Asp Val Val Lys Ala Leu Ala Ala Gly Gly Tyr Ser Val Met Ile Gly
 355 360 365
 Ser Leu Val Ala Gly Thr Glu Glu Ser Pro Gly Glu Thr Ile Ile Phe
 370 375 380
 Asn Gly Arg Lys Phe Lys Ser Tyr Arg Gly Met Gly Ser Leu Glu Ala
 385 390 395 400
 Met Glu Asn Gly Ser Lys Asp Arg Tyr Phe Gln Ser Gly Glu Met Asp
 405 410 415
 Val Lys Lys Leu Val Pro Glu Gly Ile Ala Ala Arg Val Pro Tyr Lys
 420 425 430
 Gly Thr Leu Tyr Glu Val Ile Tyr Gln Leu Thr Gly Gly Leu Arg Ala
 435 440 445
 Gly Met Gly Tyr Cys Gly Ala Pro Asp Ile Glu Lys Leu His Asp Ala
 450 455 460
 Lys Phe Thr Arg Ile Thr Asn Ala Gly Val Met Glu Ser His Pro His
 465 470 475 480
 Asp Val Thr Ile Thr Ser Glu Ser Pro Asn Tyr Ser Arg Pro Glu

<210> 8103
 <211> 788
 <212> PRT
 <213> B.fragilis

<400> 8103

Asn	Arg	Ala	Leu	Ile	Lys	Lys	Asp	Met	Asp	Arg	Arg	Asp	Tyr	Tyr	Val
1				5					10					15	
Glu	Tyr	Tyr	Glu	Val	Leu	Asp	Arg	Val	Leu	Ser	Asp	Tyr	Val	Asn	Gln
			20					25					30		
Leu	Arg	Glu	Lys	Arg	Glu	His	Trp	Leu	Lys	Met	Gly	Arg	His	Asp	Val
		35					40					45			
Gly	Val	Pro	Leu	Ile	Asn	Leu	Leu	Phe	Trp	Gln	Phe	Thr	Trp	His	Arg
	50				55						60				
Glu	Glu	Tyr	Asp	Arg	Leu	Arg	Lys	Glu	Gly	Lys	Ser	Cys	Gly	Glu	Ala
65					70				75						80
Leu	Gly	Ser	Val	Lys	Glu	Ile	Leu	Ala	Asp	Lys	Gln	Val	Glu	Glu	Trp
			85					90					95		
Glu	Arg	Gln	Glu	Glu	Tyr	Lys	Ile	Tyr	Asp	His	Glu	Trp	Tyr	Glu	
		100					105					110			
Ala	Leu	Ala	Pro	Tyr	Gly	Gly	Gln	Leu	Val	Ile	Tyr	Ile	Tyr	Asn	Ala
		115					120					125			
Arg	Gln	Leu	Val	Tyr	Leu	Thr	Pro	Leu	Ile	Glu	Arg	Leu	Glu	Glu	Pro
	130					135					140				
Val	Leu	Leu	Leu	Ser	Glu	Tyr	Glu	Ile	Pro	Asp	Glu	Thr	Glu	Leu	Pro
145					150					155					160
Asp	Phe	Val	Thr	Ala	Ile	Thr	Leu	Glu	Phe	Thr	Lys	Thr	Ala	Pro	Leu
				165				170						175	
Val	Asn	Pro	Phe	Leu	Lys	Glu	Trp	Phe	Pro	Leu	Ile	Phe	Gln	Tyr	Ala
			180					185					190		
Asn	Thr	Phe	Asp	Ile	Leu	Met	Arg	Ile	Leu	Gln	Pro	Lys	Gly	Leu	Ile
		195				200						205			
Phe	Leu	Glu	Gly	Cys	His	Tyr	Gln	Gln	Leu	Leu	Leu	Ala	Thr	Ile	Gly
	210					215					220				
Arg	Asp	Tyr	Gly	Val	Pro	Thr	Leu	Cys	Ile	Gln	Gln	Gly	Trp	Pro	Ser
225					230					235					240
Leu	Met	His	Thr	Ala	Phe	Arg	Arg	Met	Pro	Tyr	Arg	Tyr	Tyr	Leu	Met
				245				250						255	
Trp	Gly	Glu	Gly	Phe	Arg	Thr	Leu	Trp	Glu	Lys	His	Asn	Pro	Leu	Pro
		260					265						270		
Asp	Phe	Val	Pro	Thr	Gly	Tyr	Met	Tyr	Gln	Val	Glu	Pro	Arg	Asn	Glu
		275					280					285			
Thr	Lys	Lys	Glu	Cys	Val	Thr	Phe	Phe	Leu	Gln	Gly	Pro	Phe	Phe	Leu
	290					295					300				
Ser	Asp	Lys	Arg	Tyr	Leu	Gln	Glu	Met	Ile	Arg	Leu	Ile	Gly	Thr	Val
305					310					315					320
Ala	Val	Glu	Phe	Pro	Ala	Arg	Arg	Phe	Leu	Val	Arg	Glu	His	Pro	Glu
			325					330						335	
Phe	Arg	Ile	Gly	Glu	Glu	Val	Arg	Met	Glu	Trp	Glu	Gln	Ile	Pro	Asn
		340						345					350		
Ile	Glu	Met	Val	Thr	Asp	Gly	Lys	Leu	Ala	Glu	Val	Phe	Ala	Arg	Thr
		355					360					365			
Arg	Val	Gly	Val	Ala	His	Tyr	Ser	Ser	Ser	Leu	Met	Glu	Gly	Val	Ala
	370					375					380				
His	Gly	Ala	Val	Pro	Leu	Val	Tyr	Asp	Pro	Thr	Glu	Gly	Ser	Arg	Tyr
385					390					395					400
Ser	Pro	Asp	Val	Glu	Ala	Glu	Gly	Leu	Gly	Met	Ile	Ala	Lys	Thr	Lys

405 410 415
 Glu Glu Leu Thr Gly Gly Leu Ser Arg Ile Leu Gly Asn Tyr Glu Asp
 420 425 430
 Phe Lys Gln Arg Ile Glu Lys Glu Gln Pro Leu Trp Leu Gln Ala Thr
 435 440 445
 Gly Glu Glu Thr Leu Arg Asn Met Val Gly Phe Ile Lys Glu Lys Met
 450 455 460
 Pro Pro Val Thr Leu Lys Glu Ile Tyr Val Val Asp Thr Asp Thr Leu
 465 470 475 480
 Thr Arg Glu Arg Pro Val Gly Val Ser Gly Val Leu Arg Cys Lys Asn
 485 490 495
 Cys Glu Asp Phe Leu Glu Met Cys Ile Asp Ser Cys Ile Asp Gly Leu
 500 505 510
 Asp Glu Leu Ile Ala Val Tyr His Asp Cys Thr Asp Arg Thr Pro Glu
 515 520 525
 Ile Leu Arg Gln Lys Ala Ala Gln Tyr Pro Asp Lys Ile Arg Val Phe
 530 535 540
 Glu Tyr Arg Pro Ser Val Tyr Pro Ile Asp Leu Asp Glu Glu Glu Leu
 545 550 555 560
 Glu Lys Ala Lys Leu Leu Pro Pro Asp Ser Ile His Thr Leu Ala Gly
 565 570 575
 Tyr Cys Asn Tyr Ala Leu Ser Lys Ala Ser Tyr Arg Tyr Ala Val Lys
 580 585 590
 Ile Asp Ala Asp Gln Val Tyr Phe Thr Asp Arg Leu Lys His Ile Cys
 595 600 605
 Asp Ala Tyr Arg Ser Asp Lys Lys Val Arg Phe Asn Val Ala Glu Cys
 610 615 620
 Ile Ser Tyr Asn Leu Tyr Arg Ala Tyr Val Asp Ser Phe Asn Arg Ile
 625 630 635 640
 Glu Met Arg Pro Phe Arg Trp Leu Glu Arg Ile Ala Leu Trp Thr His
 645 650 655
 Ala Ser Tyr Ala Ser Tyr Leu Glu Lys Met Ile Ile Arg Tyr Lys Val
 660 665 670
 Pro Val Ser Met Ser Gly Ile Asn Leu Phe Arg Lys Asp Arg Glu Trp
 675 680 685
 Met Val Gly Leu Gly Gln Glu His Pro Glu Pro Asp Ser Lys Glu Ile
 690 695 700
 Leu Pro Pro Phe Asn Gly Val Arg Asp Thr Phe Phe Phe Glu Val Ser
 705 710 715 720
 Ala Asp Arg Ile Phe Arg Tyr Val Thr Glu Thr Lys Pro Asp Gly Arg
 725 730 735
 His Arg Gly Val Glu Val Met Arg Cys Pro Asn Glu Ile Leu Asp Val
 740 745 750
 Gly Phe Cys Trp Phe His Leu Arg Ala Leu Met Lys Glu His Glu Glu
 755 760 765
 Gly Tyr Arg Gln Ser Tyr Arg Lys His Pro Glu Val Phe Thr Thr Val
 770 775 780
 Gln Glu Ile Ser
 785

<210> 8104

<211> 60

<212> PRT

<213> B.fragilis

<400> 8104

Ser Thr Ser Thr Pro Phe Asn Gly Leu Phe Arg Gln Ser Ala Ala Leu
 1 5 10 15
 Ser Leu Leu Arg Leu His Ile Thr Pro Thr Gly Ser Thr Gly Ile Leu

	20		25		30										
Thr	Cys	Ser	Ala	Ile	Gly	Leu	Thr	Val	Arg	Leu	Ser	Leu	Arg	Thr	Arg
	35						40					45			
Leu	Thr	Leu	Ile	Arg	Leu	Ala	Leu	Ile	Arg	Lys	Pro				
	50					55					60				

<210> 8105
 <211> 68
 <212> PRT
 <213> B.fragilis

Thr	Tyr	Ala	Thr	Lys	Leu	Gln	Val	Pro	Lys	Met	Lys	Ser	Lys	Phe	Glu
1				5					10					15	
Asp	Gly	Gln	Tyr	Leu	Asn	Ile	Tyr	His	Ile	Lys	Ser	Ala	Thr	Tyr	Ile
			20					25					30		
Asn	Ser	Phe	Leu	Phe	Asp	Gly	Gln	Thr	Gly	Leu	Thr	Thr	Arg	Pro	Thr
		35					40					45			
Glu	Ala	Ile	Ser	Gly	Thr	Pro	Ser	Ser	Ile	Leu	Ser	Leu	Cys	Leu	Arg
	50					55					60				
Leu	Leu	Lys	Ala												
65															

<210> 8106
 <211> 87
 <212> PRT
 <213> B.fragilis

Asn	Phe	Val	Thr	Met	Lys	Lys	Leu	Ser	Lys	Ile	Lys	Leu	Thr	Asn	Leu
1				5					10					15	
Ser	Gln	Glu	Asp	Leu	Ala	Asp	Arg	Glu	Met	Asn	Ala	Leu	Arg	Gly	Gly
			20					25					30		
His	Asn	Cys	Gly	Cys	Ala	Cys	Ser	Ser	Thr	Ser	Lys	Ala	Thr	Asn	His
		35					40					45			
Ser	Ser	Asn	Glu	Asp	Arg	Asp	Leu	His	Ser	Pro	Glu	Gly	Asn	Val	Ile
	50					55					60				
Cys	Thr	Trp	Val	Gly	Gly	Ala	Gly	Ser	Asp	Ile	Ser	Val	Tyr	Gly	Gly
65					70				75					80	
Ser	Lys	Ala	Pro	Gly	Met	Pro									
					85										

<210> 8107
 <211> 89
 <212> PRT
 <213> B.fragilis

Asn	Phe	Val	Thr	Met	Lys	Lys	Leu	Ser	Lys	Ile	Lys	Leu	Thr	Asn	Leu
1				5					10					15	
Ser	Gln	Glu	Asp	Leu	Ala	Asp	Arg	Glu	Met	Asn	Ala	Leu	Arg	Gly	Gly
			20					25					30		
His	Thr	Cys	Gly	Cys	Ala	Cys	Ile	Lys	Gly	Ala	Glu	Phe	Lys	Ala	Thr
		35					40					45			
Asn	Tyr	Ser	Ala	Asn	Val	Ala	Asp	Asp	Lys	Tyr	Ser	Pro	Glu	Gly	Asn
	50					55					60				
Ile	Ile	Cys	Asn	Trp	Val	Gly	Gly	Ser	Gly	Ser	Asp	Met	Ala	Val	Tyr
65					70				75					80	
Gly	Gly	Ser	Lys	Val	Pro	Gly	Met	Pro							

<210> 8108
 <211> 259
 <212> PRT
 <213> B.fragilis

<400> 8108

Pro	Gln	Arg	Thr	Asp	Ser	Phe	Gly	Arg	Gly	Arg	Trp	Lys	Leu	Phe	Val
1				5					10					15	
Gln	Arg	Arg	Pro	Ser	Gly	Pro	Val	Leu	Pro	Ala	Gly	Leu	Ser	Lys	Asp
			20					25					30		
Asp	Ser	Leu	Leu	Phe	Ala	Glu	His	Tyr	Val	Arg	Ser	Trp	Val	Glu	Asp
		35					40					45			
Val	Leu	Leu	Phe	Asn	Gln	Ala	Gln	Ser	Asn	Ile	Pro	Asp	Asn	Gly	Glu
		50				55					60				
Ile	Asp	Lys	Leu	Val	Glu	Asn	Tyr	Arg	Lys	Ala	Leu	Ile	Met	His	Thr
65					70					75				80	
Tyr	Gln	Gln	Glu	Leu	Ile	Ser	Gln	Lys	Leu	Ser	Gly	Glu	Ile	Pro	Glu
			85					90					95		
Gln	Glu	Ile	Ala	Asp	Tyr	Tyr	Glu	Lys	Asn	Lys	Glu	Leu	Phe	Lys	Leu
			100					105					110		
Asp	Arg	Pro	Leu	Met	Lys	Gly	Leu	Phe	Ile	Lys	Val	Pro	Leu	Thr	Ala
		115					120					125			
Pro	Gln	Leu	Gly	Asn	Val	Arg	Lys	Trp	Tyr	Lys	Thr	Glu	Thr	Gln	Asp
		130				135					140				
Ala	Val	Glu	His	Leu	Glu	Lys	Tyr	Ser	Leu	Gln	Asn	Ala	Val	Lys	Tyr
145					150					155				160	
Glu	Tyr	Phe	Tyr	Asp	Lys	Trp	Val	Arg	Val	Ala	Asp	Val	Leu	Asp	Met
				165					170					175	
Ile	Pro	Leu	Lys	Ala	Glu	Ser	Pro	Glu	Ala	Tyr	Met	Asp	Lys	Asn	Arg
			180					185					190		
His	Ile	Glu	Leu	Lys	Asp	Thr	Ala	Phe	Tyr	Tyr	Phe	Leu	Asn	Ile	Ser
		195					200					205			
Asp	Phe	Arg	Val	Ala	Gly	Glu	Gln	Glu	Pro	Tyr	Glu	Phe	Ala	Gln	Pro
		210				215					220				
Lys	Val	Lys	Asp	Met	Leu	Val	Asn	Ile	Lys	Arg	Val	Asp	Phe	Met	Lys
225					230					235				240	
Gln	Val	Lys	Asp	Asp	Leu	Tyr	Glu	Arg	Ala	Val	Lys	Arg	Lys	Lys	Ile
			245						250					255	

Ile Asn Tyr

<210> 8109
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 8109

Tyr	Glu	Ile	Ala	Met	Gly	Met	Phe	Asn	Val	Arg	Lys	Pro	Arg	Gly	Phe
1				5					10					15	
Asn	His	Gln	Tyr	Ile	Tyr	Val	Asp	Glu	Arg	Lys	Glu	Lys	Leu	Ala	Lys
		20						25					30		
Met	Glu	Glu	Asp	Ala	Lys	Arg	Asp	Leu	Gly	Ile	Leu	Pro	Glu	Lys	Glu
		35					40					45			
Phe	Ser	Pro	Glu	Asp	Ile	Arg	Gly	Lys	Phe	Ile	Glu	Gly	Thr	Thr	His
	50					55					60				
Leu	Lys	Arg	Arg	Lys	Glu	Ser	Gly	Arg	Lys	Pro	Ala	His	Leu	Gly	Val
65					70					75				80	

[illegible]

<400> 8110

$\langle 210 \rangle$ 8111

<211> 431

<212> PRT

<213> B.fragilis

<400> 8111

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5					10					15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75					80
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100					105					110		
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile

115	120	125
Asn Ala Leu Val Ser Thr Gly	Glu Leu Lys Glu Ile Glu	Glu Tyr Asp
130	135	140
Val Asp Phe Asp His Gln Phe	Leu Glu Thr Glu Lys Tyr Asp	Ala Lys
145	150	155
Pro Thr Tyr Lys Lys Phe Leu	Gly Tyr Arg Pro Gly Val Tyr	Val Ile
165	170	175
Gly Asp Lys Ile Val Tyr Ile	Glu Asn Ser Asp Gly Asn Thr	Asn Val
180	185	190
Arg Phe His Gln Ala Asp Thr	His Lys Arg Phe Phe Ala	Leu Glu
195	200	205
Ser Gln Asn Ile Arg Val Asn	Arg Phe Arg Ala Asp Cys	Gly Ser Cys
210	215	220
Ser Lys Glu Ile Val Ser Glu	Ile Glu Lys His Cys Lys	His Phe Tyr
225	230	235
Ile Arg Ala Asn Arg Cys Ser	Ser Leu Tyr Asn Asp Ile	Phe Ala Leu
245	250	255
Arg Gly Trp Lys Thr Glu Glu	Ile Asn Gly Ile Gln Phe	Glu Leu Asn
260	265	270
Ser Ile Leu Val Glu Lys Trp	Glu Gly Lys Cys Tyr Arg	Leu Val Ile
275	280	285
Gln Arg Gln Arg Arg Asn Ser	Gly Asp Leu Asp Leu Trp	Glu Gly Glu
290	295	300
Tyr Thr Tyr Arg Cys Ile Leu	Thr Asn Asp Tyr Lys Ser	Ser Thr Arg
305	310	315
Asp Ile Val Glu Phe Tyr Asn	Leu Arg Gly Gly Lys Glu	Arg Ile Phe
325	330	335
Asp Asp Met Asn Asn Gly Phe	Gly Trp Ser Arg Leu Pro	Lys Ser Phe
340	345	350
Met Ala Glu Asn Thr Val Phe	Leu Leu Leu Thr Ala	Leu Ile His Asn
355	360	365
Phe Tyr Lys Thr Ile Met Ser	Arg Leu Asp Thr Lys Ala	Phe Gly Leu
370	375	380
Lys Lys Thr Ser Arg Ile Lys	Ala Phe Val Phe Arg Phe	Ile Ser Val
385	390	395
Pro Ala Lys Trp Ile Met Thr	Ala Arg Gln Tyr Val Leu	Asn Ile Tyr
405	410	415
Thr Glu Asn Arg Ala Tyr Ala	Lys Pro Phe Lys Thr Glu	Phe Gly
420	425	430

<210> 8112
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8112
Lys Lys Met Ala His Pro Lys Arg Arg Gln Ser Lys Thr Arg Thr Ala
1 5 10 15
Lys Arg Arg Thr His Asp Lys Ala Val Ala Pro Thr Leu Ala Ile Cys
20 25 30
Pro Asn Cys Gly Glu Trp His Val Tyr His Thr Val Cys Gly Ala Cys
35 40 45
Gly Tyr Tyr Arg Gly Lys Leu Ala Ile Glu Lys Glu Ala Ala Val
50 55 60

<210> 8113
 <211> 728
 <212> PRT
 <213> B.fragilis

1. The first step is to identify the problem. This involves understanding the current situation and what needs to be changed.

Ile 1	Lys	Met	Ala	Gly 5	Lys	Ile	Asn	Leu	Thr 10	Asp	Gln	Leu	Lys	Lys 15	Tyr
Phe	Gly	Phe	Asp 20	Asn	Phe	Lys	Gly	Asn 25	Gln	Glu	Pro	Ile	Ile 30	Gln	Asn
Leu	Leu	Asp 35	Gly	Asn	Asp	Thr	Phe 40	Val	Leu	Met	Pro	Thr 45	Gly	Gly	Gly
Lys	Ser 50	Leu	Cys	Tyr	Gln	Leu 55	Pro	Ser	Leu	Leu	Met 60	Glu	Gly	Thr	Ala
Ile 65	Val	Ile	Ser	Pro	Leu 70	Ile	Ala	Leu	Met	Lys 75	Asn	Gln	Val	Asp	Ala 80
Met	Arg	Asn	Phe 85	Ser	Glu	Glu	Asp	Gly 90	Val	Ala	His	Phe	Ile 95	Asn	Ser
Ser	Leu	Asn	Lys 100	Gly	Ala	Ile	Asp	Gln 105	Val	Arg	Ser	Asp	Ile 110	Leu	Ala
Gly	Lys	Thr 115	Lys	Leu	Leu	Tyr	Val 120	Ala	Pro	Glu	Ser	Leu 125	Thr	Lys	Glu
Glu	Asn 130	Val	Glu	Phe	Leu	Arg 135	Ser	Val	Lys	Ile	Ser 140	Phe	Tyr	Ala	Val
Asp 145	Glu	Ala	His	Cys	Ile 150	Ser	Glu	Trp	Gly	His 155	Asp	Phe	Arg	Pro	Glu 160
Tyr	Arg	Arg	Ile 165	Arg	Pro	Ile	Ile	Asn	Glu 170	Ile	Gly	Lys	Ala	Pro	Leu 175
Ile	Ala	Leu	Thr 180	Ala	Thr	Ala	Thr 185	Pro	Lys	Val	Gln	His 190	Asp	Ile	Gln
Lys	Asn 195	Leu	Gly	Met	Val	Asp 200	Ala	His	Val	Phe	Lys 205	Ser	Ser	Phe	Asn
Arg	Pro 210	Asn	Leu	Tyr	Tyr	Glu 215	Val	Arg	Pro	Lys	Thr 220	Gln	Asn	Val	Asp
Lys 225	Asp	Ile	Ile	Lys	Phe 230	Ile	Lys	Asn	Asn 235	Pro	Glu	Lys	Ser	Gly	Ile 240
Ile	Tyr	Cys	Leu	Ser 245	Arg	Lys	Lys	Val	Glu 250	Glu	Leu	Ala	Glu	Ile	Leu 255
Gln	Ala	Asn	Gly 260	Ile	Asn	Ala	Arg 265	Ala	Tyr	His	Ala	Gly 270	Met	Asp	Ser
Ala	Thr 275	Arg	Thr	Gln	Asn	Gln	Asp 280	Asp	Phe	Leu	Met	Glu 285	Lys	Ile	Asp
Val	Ile 290	Val	Ala	Thr	Ile	Ala 295	Phe	Gly	Met	Gly	Ile 300	Asp	Lys	Pro	Asp
Val 305	Arg	Tyr	Val	Ile	His 310	Tyr	Asp	Ile	Pro	Lys 315	Ser	Leu	Glu	Gly	Tyr 320
Tyr	Gln	Glu	Thr 325	Gly	Arg	Ala	Gly	Arg	Asp 330	Gly	Gly	Glu	Gly	Gln	Cys
Ile	Thr	Phe 340	Tyr	Thr	Asn	Lys	Asp	Leu 345	Gln	Lys	Leu	Glu 350	Lys	Phe	Met
Gln	Gly 355	Lys	Pro	Val	Ala	Glu	Gln 360	Glu	Ile	Gly	Lys 365	Gln	Leu	Leu	Leu
Glu	Thr 370	Ala	Ala	Tyr	Ala	Glu 375	Ser	Ser	Val	Cys	Arg 380	Arg	Lys	Thr	Leu
Leu 385	His	Tyr	Phe	Gly	Glu 390	Glu	Tyr	Thr	Glu	Glu 395	Asn	Cys	Gly	Asn	Cys 400
Asp	Asn	Cys	Leu 405	Asn	Pro	Lys	Lys	Gln	Val 410	Glu	Ala	Gln	Glu	Leu	Leu 415
Cys	Ala	Val	Ile 420	Glu	Thr	Ile	Ile	Ala 425	Val	Lys	Glu	Asn 430	Phe	Lys	Ala
Asp	Tyr 435	Ile	Asp	Val	Leu	Gln	Gly 440	Arg	Glu	Thr	Ser 445	Glu	Val	Gln	
Ala	His	Leu	His	Glu	Asp	Leu	Glu	Val	Phe	Gly	Ser	Gly	Met	Gly	Glu

450	455	460
Glu Asp Lys Thr Trp	Asn Ala Val Ile Arg	Gln Ala Leu Ile Ala Gly
465	470	475
Tyr Leu Ser Lys Asp	Val Glu Asn Tyr Gly	Leu Leu Lys Val Thr Asp
	485	490
Ala Gly Lys Lys Phe	Leu Lys His Pro Lys	Ser Phe Lys Ile Thr Glu
	500	505
Asp Asn Asp Phe Glu	Glu Val Glu Glu Thr	Pro Ala Arg Gly Gly
	515	520
Gly Ser Cys Ala Val	Asp Pro Val Leu Tyr	Ser Met Leu Lys Asp Leu
	530	535
Arg Lys Lys Leu Ser	Lys Lys Leu Glu Val	Pro Pro Tyr Val Ile Phe
	545	550
Gln Asp Pro Ser Leu	Glu Ala Met Ala Thr	Ile Tyr Pro Val Thr Leu
	565	570
Glu Glu Leu Gln Asn	Ile Pro Gly Val Gly	Ala Gly Lys Ala Lys Arg
	580	585
Tyr Gly Glu Glu Phe	Cys Lys Leu Ile Lys	Arg His Cys Glu Glu Asn
	595	600
Glu Ile Glu Arg Pro	Glu Asp Leu Arg Val	Arg Thr Val Ala Asn Lys
	610	615
Ser Lys Met Lys Val	Ala Ile Ile Gln Ala	Ile Asp Arg Lys Val Ala
	625	630
Leu Asp Asp Ile Ala	Leu Ser Lys Gly Ile	Glu Phe Ser Glu Leu Leu
	645	650
Asp Glu Val Glu Ala	Ile Val Tyr Ser Gly	Thr Lys Leu Asn Ile Asp
	660	665
Tyr Phe Leu Asp Glu	Ile Met Asp Glu Asp	His Met Leu Asp Ile Tyr
	675	680
Asp Tyr Phe Lys Glu	Ser Thr Thr Asp Lys	Ile Asp Asp Ala Leu Asp
	690	695
Glu Leu Gly Asp Glu	Phe Thr Glu Glu Glu	Val Arg Leu Val Arg Ile
	705	710
Lys Phe Ile Ser Glu	Met Ala Asn	
	725	

<210> 8114

<211> 398

<212> PRT

<213> B.fragilis

<400> 8114

Asn Leu Phe Tyr Met	Lys Ala Arg His	Phe Phe Tyr Pro	Phe Leu Ser
1	5	10	15
Leu Phe Ser Val Ala	Met Phe Ala Ser	Cys Ser Ser Ser	Val Pro Lys
	20	25	30
Ser Pro Glu Gln Arg	Val Glu Tyr Asn	Glu Asp Phe Phe	Ser Ile Ala
	35	40	45
Val Ser Asp Val Lys	Asp Thr Ile Lys	Val Tyr Ile Glu	Asp Leu Val
	50	55	60
Asp Ser Leu Val Ile	Leu Pro Leu Asp	Asn Asp Lys Lys	Ala Leu Cys
	65	70	75
Ala Pro Leu Thr Val	Tyr Ile Thr Glu	Gln His Ile Gly	Leu Thr Pro
	85	90	95
Ser Glu Arg Gly Thr	Tyr Lys Leu Phe	Ser Arg Asp Gly	Ser Phe
	100	105	110
Leu Cys Asn Val Gly	Gly Phe Gly Gln	Gly Pro Gly Glu	Tyr Thr Ala
	115	120	125
Leu Leu Tyr His Gln	Ile Asp Glu Lys	Ala Lys Arg Ile	Tyr Leu Asn

130	135	140
Thr Phe Glu Ala Ser Gln Ile Met Val Tyr Asp Phe Lys Gly Gln Tyr		
145	150	155
Leu His Asp Ile Pro Leu Ala Ser Ile Leu His Lys Gly Ser Phe Lys		160
	165	170
Val Asp Ser Glu His Lys Met Ile Tyr Cys Phe Asp Val Pro Ala Gly		175
	180	185
Gln Ser Pro Phe Val Trp Lys Gln Asp Phe Glu Gly Asn Ile Lys Gly		190
	195	200
Lys Ile His Ser Tyr Pro Tyr Thr Leu Lys Pro Asp Phe Gly Asn Asp		205
	210	215
Val Gln Thr Met Phe Asn Thr Glu Ala Phe Tyr Thr Ser Val Ser Ala		220
225	230	235
Gly Phe Glu Gln Leu Glu Gly Met Asn Asp Thr Leu Tyr His Tyr Tyr		240
	245	250
Pro Glu Thr Asp Val Leu Thr Pro Val Phe Tyr Ala Asp Phe Gly Lys		255
	260	265
Glu Gly His Gln His Arg Tyr Leu Asn Thr Pro Leu Asn Tyr Tyr Val		270
	275	280
Gly Leu Ser Ser Gly Tyr Thr Asn Asp Arg Gly Pro Phe Thr Thr Leu		285
	290	295
Asp Tyr Thr Val Ile Lys Val Asp Lys Lys Thr His Glu Ala Ser Tyr		300
305	310	315
Ile Lys Leu Phe Ser Arg Gly Tyr Gly Gly Leu Ser Leu Asp Leu Tyr		320
	325	330
Tyr Ala Gln Phe Arg Phe Gly Tyr Phe Tyr Leu Trp Met Glu Pro Ile		335
	340	345
Glu Leu Lys Glu Gln Leu Ser Gln Ile Leu Lys Leu Ser Glu Met Asp		350
	355	360
Thr Ala Met Arg Gly Lys Val Glu Lys Leu Tyr Asn Gly Leu Ser Glu		365
	370	375
Asn Gly Asn Ser Val Leu Leu Phe Gly Arg Leu Lys Gln Lys		380
385	390	395

<210> 8115

<211> 424

<212> PRT

<213> B.fragilis

<400> 8115

Pro Ile Asn Tyr Arg Pro Met Lys Leu Asp Tyr Ile Ala Leu Phe Leu	
1	5
Val Leu Phe Phe Leu Ala Ala Cys Gly Ser Lys Ser Ser Ser Pro Asp	
	10
	15
Met Met Asp Asp Asn Ala Leu Pro Thr Glu Glu Thr Phe Lys Glu Ile	
	20
	25
	30
Asp Leu Ala Asn Asn Leu Glu Asp Cys Gly Lys Pro Leu Leu Leu Ser	
	35
	40
	45
Asp Ile Val Lys Asp Val Glu Tyr Val Lys Leu Glu Thr Gln Asp Asn	
65	70
	75
	80
Ile Leu Val Gly Asp Ile Lys Gln Leu Lys Arg Thr Glu Gln Tyr Ile	
	85
	90
	95
Phe Ile Tyr Ser Arg Arg Gln Asn His Ile Met Met Phe Asp Lys Ser	
	100
	105
	110
Gly Lys Phe Ile Arg Arg Ile Gly Arg Val Gly Gln Gly Pro Gly Glu	
	115
	120
	125
Met Ser Asn Ile Gln Ser Phe Thr Thr Asn Asp Asn Arg Val Phe Ile	
	130
	135
	140
Tyr Pro Leu Ser Arg Ser Ser Ser Phe Met Ile Tyr Asp Thr Gln Asn	

145		150		155		160									
Asn	Asp	Phe	Ile	Lys	Glu	Val	Ser	Leu	Lys	Tyr	Pro	Val	Ser	Val	Asn
		165		170		175									
Asp	Lys	Ile	Asp	Ile	Met	Asp	Asn	Cys	Leu	Ile	Tyr	Tyr	Pro	Gly	Ile
		180		185		190									
Ile	Tyr	Phe	Pro	Gly	Asn	Lys	Glu	Gly	Phe	Ile	Ser	Ala	Cys	Val	Ile
		195		200		205									
Asn	Thr	Asp	Gly	Gln	Ile	Val	Arg	Glu	Gln	Val	Pro	Glu	Met	Pro	Val
		210		215		220									
Glu	Ala	Lys	Lys	Ile	Asp	Met	Ala	Ile	Asp	Pro	Asp	Ile	Ser	Trp	Asn
225				230		235									240
Tyr	Gln	Gly	Lys	Ser	Asn	Ile	Tyr	Ser	Leu	Ile	Asn	Asp	Thr	Ile	Tyr
		245		250		255									
Gly	Ile	Thr	Cys	Asp	Ser	Ile	Phe	Pro	Arg	Tyr	His	Leu	Ser	Leu	Gly
		260		265		270									
Lys	Tyr	Lys	Leu	Pro	Pro	Glu	Lys	Tyr	Asn	Phe	Cys	Asn	Asn	Leu	Asp
		275		280		285									
Leu	Gly	Asp	Phe	Ile	Leu	Ile	Lys	Ser	Val	Cys	Glu	Thr	Lys	Asp	Tyr
		290		295		300									
Leu	Leu	Phe	Ser	Tyr	Trp	Phe	Asn	Cys	Lys	Met	Trp	Phe	Ser	Arg	Tyr
305				310		315									320
Asp	Lys	Asn	Lys	Asp	Lys	Ile	Asp	Ser	Trp	Glu	Gln	Val	Pro	Phe	Glu
		325		330		335									
Val	Arg	Tyr	Trp	Met	Ile	Arg	Asp	Ala	Pro	Gly	Val	Thr	Asn	Asp	Ile
		340		345		350									
Asp	Gly	Thr	Gln	Ser	Phe	Arg	Gly	Asn	Asn	Asn	Met	Lys	Asp	Val	Gly
		355		360		365									
Glu	Asn	Cys	Phe	Cys	Phe	Val	Ile	Thr	Pro	Asp	Asn	Leu	Asp	Gln	Val
		370		375		380									
Arg	Arg	Asn	Val	Ala	Glu	Ala	Lys	Val	Lys	Phe	Pro	Glu	Lys	Gln	Ala
385				390		395									400
Glu	Leu	Leu	Lys	Leu	Leu	Asp	Glu	Met	Gly	Glu	Asp	Asp	Asn	Pro	Ile
		405		410		415									
Ile	Ala	Phe	Tyr	Lys	Leu	Lys	Asp								
		420													

<210> 8116
 <211> 312
 <212> PRT
 <213> B.fragilis

<400> 8116
 Asn Ala Ser Tyr Phe Asp Ser Met Arg Phe Phe Val Ser Ile Asn Lys
 1 5 10 15
 Trp Lys Thr Met His Lys Ala Gly Phe Val Asn Ile Val Gly Asn Pro
 20 25 30
 Asn Val Gly Lys Ser Thr Leu Met Asn Val Leu Val Gly Glu Arg Ile
 35 40 45
 Ser Ile Ala Thr Phe Lys Ala Gln Thr Thr Arg His Arg Ile Met Gly
 50 55 60
 Ile Tyr Asn Thr Asp Asp Met Gln Ile Val Phe Ser Asp Thr Pro Gly
 65 70 75 80
 Val Leu Lys Pro Asn Tyr Lys Leu Gln Glu Ser Met Leu Asn Phe Ser
 85 90 95
 Thr Ser Ala Leu Ala Asp Ala Asp Val Leu Leu Tyr Val Thr Asp Val
 100 105 110
 Ile Glu Thr Pro Asp Lys Asn Asn Glu Phe Ile Gln Lys Val Arg Gln
 115 120 125
 Gln Ser Ala Pro Ile Leu Leu Leu Ile Asn Lys Ile Asp Leu Thr Asp

130		135		140
Gln Glu Lys Leu Val	Lys Leu Val Glu Glu Trp	Lys Glu Leu Leu Pro		
145	150	155	160	
Gln Ala Glu Ile Ile	Pro Ile Ser Ala Ala Thr	Lys Phe Asn Val Asp		
	165	170	175	
Tyr Val Met Lys Arg	Ile Lys Asp Leu Leu Pro	Asp Ser Pro Pro Tyr		
	180	185	190	
Phe Asp Lys Asp Gln	Trp Thr Asp Lys Pro	Ala Arg Phe Phe Val Asn		
	195	200	205	
Glu Ile Ile Arg Glu	Lys Ile Leu Leu Tyr Tyr	Asp Lys Glu Ile Pro		
	210	215	220	
Tyr Ser Val Glu Val	Val Val Glu Glu Phe Lys	Glu Asp Ala Lys Lys		
225	230	235	240	
Ile His Ile His Ala	Val Ile Tyr Val Glu Arg	Asp Ser Gln Lys Gly		
	245	250	255	
Ile Ile Ile Gly Lys	Gln Gly Lys Ala Leu Lys	Lys Val Ala Thr Glu		
	260	265	270	
Ala Arg Arg Asp Leu	Glu Arg Phe Phe Gly Lys	Thr Val Phe Leu Glu		
	275	280	285	
Thr Tyr Val Lys Val	Asp Lys Asp Trp Arg Ser	Ser Asp Lys Glu Leu		
	290	295	300	
Arg Asn Phe Gly Tyr	Gln Leu Asp			
305	310			

<210> 8117

<211> 423

<212> PRT

<213> B.fragilis

<400> 8117

Tyr Arg Glu Tyr Arg	Arg Arg Ser Ile Leu Glu	Ile Trp Ile Lys Asp
1	5	10
Asp Ser Phe Met Lys	His Ile Tyr Leu Ile Gly	Asn Gly Ser Arg Ala
	20	25
Ala Gln Tyr Gly Val	Gly Thr Tyr Ile Arg Gln	Met Leu Glu Phe Phe
	35	40
Arg Gln Thr Ser Ser	Val Arg Leu Thr Ile Val	Glu Leu Asn Ser Glu
	50	55
Val Lys Glu Val Thr	Glu Glu Cys Asp Asn Ser	Gly Lys Val Cys Tyr
	65	70
Leu Lys Ile Pro Ala	Gln Lys Ser Glu Gly Arg	Lys Gly Asp Val Ala
	85	90
His Cys Tyr Arg Asn	Ile Ala Tyr Leu Leu Ala	Leu His Phe Leu Lys
	100	105
Asp Glu Gln Asn Val	Leu His Leu Asn Tyr Leu	His His Ala Pro Leu
	115	120
Ala Asp Trp Leu Lys	Lys Ile Gly Val Glu Phe Tyr	Leu Leu Val Thr
	130	135
Ile His Tyr Leu Asp	Trp Cys Phe Met Leu Lys	Gly Asn Thr Arg Leu
	145	150
Phe Arg Ser Ile Ile	His Lys Glu Glu Gln Ser	Asn Glu Trp Gly Lys
	165	170
Lys Ile Arg Asn Ser	Tyr Glu Arg Asp Lys Arg	Leu Phe Gln His Ser
	180	185
Asp Lys Val Ile Cys	Leu Ser Gln Tyr Thr Gln	Asn Leu Leu Arg Glu
	195	200
Asp Tyr Gly Val Glu	Lys Glu Lys Leu Val Val	Val Tyr Asn Gly Leu
	210	215
Lys Asp Glu Ala Ile	Lys Leu Ser Lys Glu Glu	Arg Leu Glu Lys Arg
	220	

225		230		235		240									
Ser	Ala	Leu	Gly	Phe	Arg	Glu	Thr	Asp	Lys	Ile	Ile	Leu	Phe	Val	Gly
				245					250					255	
Arg	Leu	Asp	Arg	Ile	Lys	Gly	Val	Gln	Tyr	Leu	Ile	Glu	Ala	Phe	Arg
				260					265					270	
Gln	Val	Ile	Arg	Lys	Asn	Pro	Asn	Ser	Arg	Leu	Val	Ile	Val	Gly	Asp
				275					280					285	
Gly	Asp	Tyr	Asp	Lys	Tyr	Leu	Lys	Gln	Cys	Ala	Gly	Ile	Trp	Ser	Tyr
				290					295					300	
Val	Val	Leu	Thr	Gly	Lys	Val	Glu	Lys	Glu	Val	Leu	Tyr	Thr	Phe	Tyr
305															320
Gln	Ile	Ala	Asp	Val	Gly	Val	Leu	Pro	Ser	Phe	His	Glu	Gln	Cys	Ser
				325						330				335	
Tyr	Val	Ala	Ile	Glu	Met	Leu	Met	His	Gly	Leu	Pro	Leu	Ile	Gly	Thr
				340					345					350	
Gly	Ser	Thr	Gly	Leu	Lys	Glu	Met	Val	Glu	Gly	Met	His	Cys	Leu	Pro
				355					360					365	
Leu	Lys	Glu	Glu	Asp	Asp	Ser	Val	Asp	Leu	Pro	Ile	Asp	Leu	Leu	Val
				370					375					380	
Gln	Trp	Leu	Ile	Glu	Asp	Gln	Glu	His	Leu	Arg	Ser	Glu	Lys	Tyr	Arg
385										395					400
Arg	Arg	Phe	Glu	Glu	Arg	Tyr	Thr	Leu	Arg	Lys	Met	Ser	Glu	Asn	Met
				405					410					415	
Phe	Ser	Ile	Tyr	Leu	Asn	Leu									
				420											

<210> 8118

<211> 495

<212> PRT

<213> B.fragilis

<400> 8118

Ile	His	Arg	Tyr	Met	Lys	Asn	Asp	Ile	Ala	Phe	Ser	Thr	Pro	Phe	His
1				5					10					15	
Ala	Tyr	Val	Tyr	Ser	Phe	Arg	His	Lys	Glu	Tyr	Leu	Pro	Leu	His	Pro
				20				25					30		
Ile	Leu	Lys	Arg	Ile	Tyr	Thr	Val	Val	Glu	Glu	Lys	Lys	Asn	Ile	Glu
				35				40					45		
Glu	Asp	Glu	Glu	Leu	Lys	Cys	Tyr	Pro	Lys	Glu	Gln	Ile	Leu	His	Tyr
				50				55				60			
Leu	Gln	Lys	Tyr	Lys	Phe	Leu	Lys	Glu	Asn	Glu	Phe	Ile	Gly	Glu	Lys
65					70				75					80	
Val	Lys	Thr	Glu	Phe	Gly	Glu	Ile	Thr	Glu	Thr	Met	Val	Arg	Arg	Glu
				85					90					95	
Val	Glu	Asn	Leu	Thr	Val	Leu	Thr	Phe	Glu	Val	Thr	Glu	Arg	Cys	Asn
				100				105					110		
Leu	Arg	Cys	Arg	Tyr	Cys	Ala	Phe	Gly	Asp	Leu	Tyr	Tyr	Gly	Tyr	Asp
				115				120					125		
Glu	Arg	Lys	Gly	Glu	Asn	Leu	Asp	Phe	Pro	Lys	Ala	Lys	Gln	Ile	Leu
				130				135				140			
Asp	Phe	Leu	Phe	Gly	Ile	Trp	Glu	Lys	Ile	Pro	His	Leu	Ser	Val	Ala
145					150				155					160	
Arg	Thr	Leu	Thr	Val	Gly	Phe	Tyr	Gly	Gly	Glu	Pro	Leu	Met	Asn	Met
				165					170					175	
Asp	Leu	Ile	Lys	Gln	Ile	Val	Ser	Tyr	Ile	Asp	Glu	His	Lys	Pro	Glu
				180				185					190		
Gly	Met	Lys	Phe	Ala	Tyr	Asn	Met	Thr	Thr	Asn	Ala	Met	Leu	Leu	Arg
				195				200				205			
Val	Tyr	Gln	Asp	Phe	Leu	Val	Glu	His	Lys	Phe	His	Leu	Leu	Val	Ser

210	215	220
Leu Asp Gly Thr Glu Ala Asp Asp Cys His Arg Val Thr Val Asn Gly		
225	230	235
Lys Ser Ser Phe Ala Gln Val Phe Glu Gln Ile Lys Asn Leu Gln Phe		240
	245	250
Cys Tyr Pro Glu Tyr Phe Lys Lys Tyr Val Ser Phe Asn Ser Val Ile		255
	260	265
His Ser Glu Ser Asn Ile Glu Arg Ile Val Asp Phe Phe Arg Ala Glu		270
	275	280
Phe Asp Lys Gln Thr Ser Leu Ser Glu Leu Asn Asn Ser Ser Ile Ala		285
	290	295
Gln Glu Gly Lys Tyr Ala Glu Met Arg Lys Ser Val Phe Gln Ser Ile		300
305	310	315
Ala Leu Ser Pro Arg Arg Lys Glu Ile Asp Gln Gln Leu Met Tyr Asn		320
	325	330
Ala Pro Asp Ile Ser Thr Val Thr Tyr Phe Leu His His Leu Ser Asn		335
	340	345
Glu Val Phe Arg Asp Tyr Arg Ser Met Phe Tyr Gly Lys Arg Asn Phe		350
	355	360
Lys Leu Leu Pro Thr Gly Thr Cys Ile Pro Phe Asn Arg Lys Met Tyr		365
	370	375
Val Thr Val His Gly Lys Ile Leu Val Cys Glu Arg Ile Asp His Asp		380
385	390	395
Phe Ala Val Gly His Val Thr Asp Glu Gly Val Glu Leu Asn Phe Ala		400
	405	410
His Val Ala Glu Asn His Arg Lys Tyr Cys Ser Lys Leu Leu Ser Gln		415
	420	425
Cys Lys Gln Cys Tyr Met Gln Glu Ser Cys Ser Gln Cys Met Tyr Tyr		430
	435	440
Thr Asn Val Leu Ala Asp Lys Val Val Cys Arg Asn Phe Lys Asn Arg		445
	450	455
Glu Met Phe Ala Gly Tyr Leu Ala Met Asn Val Asp Tyr Leu Glu His		460
465	470	475
Asn Arg Trp Ala Tyr Ser Lys Val Met Lys Glu Ile Phe Ile Phe		480
	485	490
		495

<210> 8119

<211> 413

<212> PRT

<213> B.fragilis

<400> 8119

Asn Leu Phe His Met Lys Ala Arg His Phe Phe Tyr Pro Leu Leu Phe	
1	5
Leu Phe Ser Val Ala Met Phe Ala Ser Cys Ser Ser Tyr Val Pro Lys	
	20
Glu Gly Asp Ile Ile Glu Asp Ser Ala Phe Arg Ser Val Asp Leu Arg	
	35
Ile Ile Glu Lys Ala Glu Gly Thr Val Met Ser Leu Ser Asp Leu Val	
	50
Glu Ser Tyr Glu Val Ile Lys Leu Glu Asn Arg Asp Glu Ala Leu Ile	
65	70
Lys Thr Tyr Pro Phe Gly Ile Phe Ala Ser Asp Asn Tyr Ile Leu Leu	
	85
Asn Pro Asp Ala Ile Ser Pro Ile Lys Leu Phe Thr Arg Lys Gly Gln	
	100
Tyr Val Ala Asp Ile Gly Gly Ile Gly Gln Gly Pro Gly Glu Tyr Lys	
	115
Thr Ile His Phe Cys Met Ile Asp Glu Lys Gln Lys Arg Ile Tyr Leu	
	120
	125

130		135		140
Gly Pro Gly Arg Ala Asn Lys Ile Leu Thr Tyr Asp Leu Lys Gly Asn				
145		150		155
Tyr Leu Ser Asp Glu Ala Ile His Phe Lys Glu Ile Val His Lys Pro				
	165		170	175
Cys Ile Trp Met Asp His Asp Lys Lys His Val Thr Val Val Gly Leu				
	180		185	190
Pro Phe Ser Glu Asn Glu Asn Ser Asn Phe Glu Ile Ser Asn Asn Val				
	195		200	205
Cys Trp Val Gln Asn Arg Glu Gly Asp Ile Val His Arg Ile Ser Ala				
	210		215	220
Asn His Tyr Gly Leu Ile Gly Asp Tyr Ser Asn Gly Leu Val Ala Cys				
225		230		235
Arg Asn Val Asp Ala Ile Ser Phe Ser Ile Phe Glu Asp Pro Met Leu				
	245		250	255
Arg Thr Arg Pro Asp Thr Leu Tyr His Tyr Asp Ala Val Lys Asn Ile				
	260		265	270
Ile Thr Pro Arg Phe Thr Ile Asp His Val Val Ser Glu Asn Gln Ser				
	275		280	285
Ala Cys Thr Val Leu Tyr Glu Thr Ser Arg Ser Tyr Trp Ala Arg Val				
	290		295	300
Thr Leu Tyr Pro Asn Asp Ile Ser Ser Asn Ser Ser Pro Val Arg Leu				
305		310		315
Thr Thr Phe Asn Val Cys Val Ser Lys Lys Asp Gly Ser Val Lys Arg				
	325		330	335
Ile Asp Arg Phe Thr Asn Asp Phe Leu Gly Leu Ser Tyr Pro Phe Leu				
	340		345	350
Thr Met Arg Asn Gly Tyr Val Cys Ile Ser Tyr Asp Pro Leu Glu Leu				
	355		360	365
Met Asp Ala Leu Asp Lys Val Leu Thr Gln Thr Asp Leu Lys Pro Glu				
	370		375	380
Ile Arg Lys Arg Ala Thr Gly Leu Arg Asn Ser Leu His Glu Asn Asp				
385		390		395
Asn Asp Ile Leu Met Ile Gly Lys Leu Lys Ser Asn Tyr				
	405		410	

<210> 8120

<211> 78

<212> PRT

<213> B.fragilis

<400> 8120

Arg Ile Glu Gln Thr Tyr Ser Phe Ser Gly Lys Val Tyr Ile Tyr Pro		
1	5	10
Val Asp His Leu Ile Ile Leu Ser Gln Ile Pro Cys Arg Leu Leu Gln		
	20	25
His Ile Val Ser Leu Ile Arg Asn Pro Pro Leu Met Trp Thr Leu Ser		
	35	40
Met Thr Gly Ser Leu Asp Tyr Ser Lys Ile Val Ser Asn His Val Asn		
	50	55
Ile Ile Ile Ser Phe Asn His Leu Glu Pro His Phe Tyr Gln		
65	70	75

<210> 8121

<211> 88

<212> PRT

<213> B.fragilis

<400> 8121

Ser Leu Met Gln Arg Ile Ile Val Leu Ser Ser Tyr Leu Lys Leu Ser
 1 5 10 15
 Ile Ile Gln Leu Thr Met Arg Lys Thr Gly Leu Leu Val Ile Ser Leu
 20 25 30
 Leu Phe Cys Ala Ser Cys Ala Asp Lys His Asp Arg Lys Gly Gln Thr
 35 40 45
 Pro Leu Val Glu Val Asp Gly Asn Phe Leu Tyr Lys Glu Asp Leu Gln
 50 55 60
 Gly Arg Cys Ser Pro Pro Val Cys Gln Lys Met Thr Val Phe Phe Ser
 65 70 75 80
 Pro Ser Thr Thr Ser Val Ala Gly
 85

<210> 8122
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 8122
 Gln Arg Gln Gln Glu Asp Thr Ser Met Val Gly Ser Leu Leu Ile Gly
 1 5 10 15
 Asn Lys His Phe Leu Val Arg Glu Leu Val Gln Ala Gly Arg Ser Thr
 20 25 30
 Ser Cys Leu Gly Leu Thr Asn Gly Lys Met Gly Ile Ala Ile Ala Leu
 35 40 45
 Phe Arg Tyr Gly Arg Leu Ser Gly Glu Leu Ala Tyr Glu Glu Val Ala
 50 55 60
 Ser Glu Leu Leu Asp Asp Val Cys Gln Asn Leu Asn Tyr Ser Met Pro
 65 70 75 80
 Ile Ser Phe Asn Asp Gly Leu Cys Gly Ile Gly Trp Gly Ile Glu Tyr
 85 90 95
 Leu Ile Gln His Gly Tyr Val Asp Ala Asp Gly Asp Glu Ile Leu Arg
 100 105 110
 Asp Ile Asp Leu Tyr Leu Ile Arg Cys Ile His Ile Tyr Gly Leu Ser
 115 120 125
 Gly Leu Ser Leu Arg Asn Gly Ile Val Gly Leu Gly Arg Tyr Ile Leu
 130 135 140
 Ile Arg Ile Thr Pro Thr Phe Leu Phe Gly Asp Thr Phe Ser Ser Ala
 145 150 155 160
 Leu Leu Lys Glu Tyr Phe Ile Tyr Leu Ile Asp Trp Leu Glu Glu Glu
 165 170 175
 Leu Lys Arg Val Asp Glu Pro Val Asp Asp Leu Leu Asp Phe Leu Phe
 180 185 190
 Asp Leu Tyr Pro Thr Gly Phe Tyr Gln Thr Lys Val Ser Asp Leu Ile
 195 200 205
 Lys Tyr Cys Met Asn Lys
 210

<210> 8123
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 8123
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu

	35					40				45					
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu
	50					55					60				
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser
65					70					75					80
Ser	Ala	Arg													

<210> 8124

<211> 571

<212> PRT

<213> B.fragilis

<400> 8124

Leu	Gln	Phe	Asn	Asn	Gly	Thr	Asn	Phe	Leu	Thr	Ile	Phe	Arg	Ile	Asn
1			5						10					15	
His	Cys	Glu	Ser	Phe	Gly	Asn	Leu	Thr	Asp	Ile	His	Phe	Ile	His	His
		20						25					30		
Phe	Ser	Asn	Leu	Leu	Arg	Gln	Ile	Leu	His	Phe	Glu	Phe	Ser	Gly	Leu
	35					40						45			
Val	Leu	Arg	Val	Leu	His	Gln	Thr	Val	Ala	Val	Ala	Arg	Ile	Phe	Val
50					55					60					
Leu	Arg	Gln	Ser	Arg	Ser	Ser	Leu	Ile	Lys	Gly	Lys	Leu	Ile	Ala	Thr
65				70						75					80
Asp	Ile	Val	Gly	Asn	Arg	Val	Glu	Thr	Arg	Ile	Gly	Phe	Ile	Gln	Leu
			85						90					95	
Leu	Ile	Arg	His	Phe	Gly	Leu	Gln	Gln	Asp	Met	Thr	Gly	Val	Asp	Thr
			100					105					110		
Val	Ala	Thr	Phe	Phe	Asp	Gln	Leu	Asp	Asp	Met	Glu	Thr	Ile	Leu	Arg
		115				120						125			
Leu	Tyr	Asp	Phe	Arg	Asp	Leu	Leu	Gly	Ile	Leu	Gln	Val	Glu	Ser	Asp
130						135					140				
Ile	Gly	Val	Phe	Gly	Asn	His	Leu	Pro	Phe	Thr	His	Lys	Thr	Gly	Phe
145					150					155					160
Thr	Thr	Phe	Asp	Ser	Arg	Ala	Ala	Ile	Phe	Gly	Ile	Gln	Gln	Gly	Lys
			165						170					175	
Arg	Arg	Glu	Ile	Thr	Phe	Thr	Leu	Ile	Asp	Thr	Val	Gly	Val	Phe	Thr
		180						185					190		
Gln	Ala	Ser	Phe	Tyr	Ile	Phe	Asn	Phe	Gly	Asn	Arg	Tyr	Phe	Arg	Leu
		195					200					205			
Leu	Arg	Asn	Asn	Leu	Tyr	Phe	Tyr	Leu	Gly	Gly	Asp	Val	Arg	Asn	Thr
	210					215					220				
Val	Leu	Gly	Lys	Leu	Leu	Lys	Val	Thr	Ala	Tyr	Phe	Arg	Arg	Ser	His
225				230						235					240
Phe	Asp	Ile	Thr	Tyr	Gln	Phe	Leu	Leu	His	Pro	Leu	Tyr	Asn	Gln	Ser
			245						250					255	
Val	Thr	Gly	Ile	Leu	Ala	His	Gly	Phe	Thr	Asn	Leu	Cys	Arg	Gly	Leu
		260						265					270		
Ile	Lys	Leu	Cys	Phe	His	Ser	Phe	Ser	Ala	Thr	Gln	Ser	Leu	Asn	Ile
	275					280						285			
Ile	Thr	Asp	Leu	Ile	Val	Asp	Thr	Leu	Tyr	Asp	Phe	Cys	Leu	Gly	His
290						295					300				
Phe	Asn	Thr	Val	Glu	His	Ser	Leu	Val	His	Ile	Lys	Phe	Leu	Tyr	Gly
305					310					315					320
Gln	Leu	Phe	Gly	Asn	His	Thr	Ile	Arg	Ile	Thr	Ile	Lys	Leu	Thr	Pro
			325						330					335	
Phe	Ile	Gln	Ser	Gly	Gln	Ser	Cys	Phe	Phe	His	Ile	Gly	Leu	Gln	Asp
		340						345				350			
Ser	Phe	Val	Ala	Asn	Asp	Pro	Asn	His	Phe	Val	Asn	His	Ile	Val	Leu

355		360		365
Cys Ile Gly Cys His Val Ser Asn Gln Cys Gln Gly Lys His Asn Asn				
370		375		380
Lys Leu Lys Val His Lys Leu Leu His Ser Val Tyr Leu Ile Ile Tyr				
385		390		395
Asn Leu Leu Ser Phe Tyr Cys Thr Leu Val Gln Ile Val Phe His Leu				400
	405		410	
Phe His Lys Val Asn Pro Leu Asp Val Asp Lys His Ile Leu Asp Phe				415
	420		425	
Arg Leu Ser Lys Phe Ile Arg Phe Leu Phe Ala Arg His Thr Glu Ile				430
	435		440	
Thr Asp Ile Gln Lys Ile Val Lys Cys Arg Ile Phe Gln Phe Asn Met				445
	450		455	
Pro Val Phe Ile His Ile Gly Phe Arg Gly Phe Arg Phe Gln Arg Asp				460
465		470		475
His Ile Gln His Ile Gly His Pro His Pro Phe Ile Ile Lys Ile Leu				480
	485		490	
Ile Leu His Cys Val Leu Gln Thr Ile Leu Phe Gln Met Leu Asn Gly				495
	500		505	
Ile Leu Ser Leu Arg Phe Val Pro Leu Thr His Val Ala Gln Leu Gly				510
	515		520	
Ser Gly Gln Arg Asn Phe Asp Lys Gln Thr Phe His Gln Trp Thr Val				525
	530		535	
Gln Leu Lys Gln Phe Phe Val Leu Phe Val Ile Val Cys Tyr Phe Leu				540
545		550		555
Phe Gly Asp Leu Ala Arg Gln Phe Leu Ala Asp				560
	565		570	

<210> 8125
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 8125
Phe Asn Asn Lys Arg Ile Lys Glu Thr Glu Ser Leu Gln Lys Arg Leu
1 5 10 15
Cys Ala Gly Ser Lys Asn Leu Val Ile Glu Ile Glu Lys Leu Ile Asp
20 25 30
His Leu Ser Ala Ala Lys Lys Arg Ile Lys Thr Gly Ile Ala Ile Thr
35 40 45
Phe Ser Leu Phe Leu Tyr Thr Lys Pro Met Asn Phe Ser Asp Leu Glu
50 55 60
Arg Phe Arg Gly Glu Asn Arg Lys Tyr Gly Leu
65 70 75

<210> 8126
 <211> 458
 <212> PRT
 <213> B.fragilis

<400> 8126
Ile Ser Ile Asn Glu Ser Lys Ser Ser Ile Cys Trp Asp Ile Trp Ala
1 5 10 15
Leu Cys Thr Asn Leu Pro Gln Val Gly Val Lys Leu Glu Lys Glu Glu
20 25 30
Lys Ala Val His Ala Asn Ser Ile Arg Glu Ile Phe Tyr Thr Phe Leu
35 40 45
Asn Arg Phe Ile Met Lys Asn Leu Tyr Leu Ile Leu Val Leu Ser Ala
50 55 60

Leu Val Ala Cys Thr Gly Ser Ser Gln Lys Glu Lys Pro Ala Cys Val
 65 70 75 80
 Asn Thr Pro Val Glu Pro Phe Thr Gly Leu Pro Val Phe Asp Leu Gln
 85 90 95
 Gly Gln Tyr Pro Glu Lys Glu Ile Ile Leu Gln Asp Ile Ala Asp Val
 100 105 110
 Arg Tyr Val Val Leu Glu Thr Gly Asp Ser Ser Leu Val Gly Thr Arg
 115 120 125
 Thr Ile Leu Met Thr Asp Ser Leu Leu Val Thr Val Asn Lys Lys Ser
 130 135 140
 Asp Val Ile Phe Phe Asp Lys Ser Gly Lys Tyr Leu His Ser Phe Asn
 145 150 155 160
 His Thr Gly Met Ser Gly Glu Glu Tyr Gly Asp Val Val Ser Gly Tyr
 165 170 175
 Cys Ile Asp Glu Lys Ala Arg Glu Ile Phe Ile Tyr Asp Gly Leu Gln
 180 185 190
 Ser Arg Ile Gln Val Tyr Gly Tyr Gly Gly Ala Tyr Arg Arg Thr Leu
 195 200 205
 Lys Leu Pro Gln Asn Arg Met Phe Ala Ser Ser Ile Phe Glu Tyr Asp
 210 215 220
 Glu Asn Phe Leu Phe Gly Glu Asp Tyr Arg Leu Val Asp Tyr Gln Ile
 225 230 235 240
 Gly Lys Tyr Pro Val Asn Lys Thr Pro Tyr Tyr Lys Ile Ser Lys Lys
 245 250 255
 Asp Gly Lys Leu Thr Ser Val Pro Ile Thr Val Lys Gly Arg Ile Arg
 260 265 270
 Asp Gly Leu Tyr Thr Val Gly Asp Gly Glu Ser Gly Gly Tyr Val Ser
 275 280 285
 Leu Ser Met Ser Pro Val Ala Arg Leu Gly Ser Asp Ile Leu Ile Ala
 290 295 300
 Asp Tyr Ser Leu Asp Thr Ala Tyr Val Tyr Arg Asp Asp His Leu Ile
 305 310 315 320
 Pro Leu Thr Val Arg Arg Asn His Thr Ser Glu Asn Asn Ile Pro Ile
 325 330 335
 Leu Ala Thr Val Asp Val Met Thr Gly Arg Tyr Leu Leu Trp Tyr Thr
 340 345 350
 Ile Val Lys Asp Ile Asp Val Lys Asn Asn Arg Val Ser Asp Pro Val
 355 360 365
 Ser Tyr Leu Tyr Asp Arg Phe Thr Asn Glu Tyr Cys Arg Val Asp Leu
 370 375 380
 Val Asn Arg Asp Gly Val Ser Ala Thr Asn Val Pro Ala Phe Gln Met
 385 390 395 400
 Arg Leu Ser Ala Asn Tyr His Val Val Pro Glu Asn Tyr Ala Ile Gln
 405 410 415
 Cys Tyr Pro Ala Glu Lys Leu Ile Glu Leu Asn Gly Gln Gly Lys Leu
 420 425 430
 Lys Gly Glu Leu Lys Glu Ile Ala Ser Lys Leu Asn Asp Glu Asp Asn
 435 440 445
 Pro Val Leu Leu Ile Ala Lys Phe Lys Glu
 450 455

<210> 8127

<211> 264

<212> PRT

<213> B.fragilis

<400> 8127

Ile Asn Lys Lys Thr Met Lys Tyr Ser Glu Gln Ile Thr Ile Gly Ile
 1 5 10 15

Pro Val Arg Ile Asp Ser Pro Ala Arg Met Arg Asn Leu Gln Val Leu
 20 25 30
 Leu Arg His Leu Ser Leu Ser Gly Ile Lys Ile His Val Trp Glu Ala
 35 40 45
 Gly Asp Val Arg Ser Glu Leu Ser Gly Phe Ala Ser Asn Lys Asp Thr
 50 55 60
 Tyr Thr Tyr Glu Arg Asp Glu Ser Leu Val Tyr His Lys Thr Leu Tyr
 65 70 75 80
 Val Asn Arg Leu Leu Lys Ala Ala Ser Thr Pro Val Val Ala Ile Trp
 85 90 95
 Asp Ala Asp Ile Leu Leu Pro Leu Ser Gln Ile Glu Ala Ser Val Leu
 100 105 110
 Ala Ile Ile Glu Gln Gly Tyr Leu Leu Ser Ile Pro Tyr Asp Gly Val
 115 120 125
 Val Lys Met Leu Ser Glu Ala Gln Ser Glu Ala Phe Glu Tyr Ser Gly
 130 135 140
 Gln Gly Cys Asp Tyr Leu Thr Met Phe Ala Ala Thr Tyr Ala Arg Leu
 145 150 155 160
 Met Arg Arg Pro Ser Cys Gly Gly Val Phe Val Val Asp Arg Glu Lys
 165 170 175
 Tyr Leu His Trp Gly Gly Asp Asn Glu Arg Phe Val Ser Trp Gly Pro
 180 185 190
 Glu Asp Ala Glu Arg Ile Arg Arg Ile Glu Ile Leu Gly Tyr Pro Val
 195 200 205
 His Trp Val Lys Glu Gly Pro Leu Tyr His Leu Trp His Pro Arg Gly
 210 215 220
 Glu Asn Ser Gly Tyr Ala Thr Glu Glu Leu Ala Phe Gln Asn Arg Met
 225 230 235 240
 Glu Phe Ile Lys Val Cys Ser Met Glu Arg Asn Glu Leu Arg Glu Tyr
 245 250 255
 Ile Lys Ser Trp Lys Asn Asn Gly
 260

<210> 8128
 <211> 203
 <212> PRT
 <213> B.fragilis

<400> 8128
 Asn Pro Gly Lys Thr Met Gly Lys Val Asp Glu Ala Leu Leu Lys Arg
 1 5 10 15
 Ile Ala Asp His Gln Met Leu His Gly Ser Phe Arg Arg Asp Leu Gly
 20 25 30
 Val Leu Asn Gly Lys Met Gly Ile Val Leu Phe Phe Phe His Tyr Ala
 35 40 45
 Arg Tyr Thr Gly Arg Val Leu Tyr Glu Asp Phe Ala Gly Glu Met Leu
 50 55 60
 Glu Glu Val Ile Gln Glu Leu His Ser Asp Leu Pro Ile Arg Phe Ser
 65 70 75 80
 Asp Gly Leu Cys Gly Ile Gly Trp Gly Val Glu Tyr Leu Ile Gln Asn
 85 90 95
 Ala Phe Ile Ala Gly Asp Ser Asp Glu Ile Leu Glu Asp Leu Asp Gln
 100 105 110
 Lys Ile Met Glu Trp Asp Pro Arg Ala Thr Asp Leu Ser Phe Glu
 115 120 125
 Ser Gly Leu Glu Gly Val Ala Cys Tyr Ala Ser Ser Arg Leu Lys Ser
 130 135 140
 Thr Val Arg Asn Arg Met Pro Phe Asp Gln Val Tyr Leu Ser Glu Leu
 145 150 155 160

Glu Met Ala Val Gln Gln Lys Gly Leu Arg Met Arg Leu Glu Leu Asp
 165 170 175
 Asp Val Phe Val Arg Val Ile Asp Ile Gly Asn Ile Glu Glu Glu Val
 180 185 190
 Ser Trp Lys Tyr Gly Leu Lys Met Ile Ala Leu
 195 200

<210> 8129

<211> 438

<212> PRT

<213> B.fragilis

<400> 8129

Thr Met Gly Asn Leu Val Ala Ile Val Gly Arg Pro Asn Val Gly Lys
 1 5 10 15
 Ser Thr Leu Phe Asn Arg Leu Thr Lys Thr Arg Gln Ala Ile Val Asn
 20 25 30
 Asp Glu Ala Gly Thr Thr Arg Asp Arg Gln Tyr Gly Lys Ser Glu Trp
 35 40 45
 Leu Gly Arg Glu Phe Ser Val Val Asp Thr Gly Gly Trp Val Val Asn
 50 55 60
 Ser Asp Asp Ile Phe Glu Glu Ile Arg Lys Gln Val Leu Met Ala
 65 70 75 80
 Val Asp Glu Ala Asp Val Ile Leu Phe Val Val Asp Val Thr Asn Gly
 85 90 95
 Val Thr Asp Leu Asp Met Gln Val Ala Ala Ile Leu Arg Arg Ala Lys
 100 105 110
 Ser Pro Val Ile Met Val Ala Asn Lys Thr Asp Asn His Glu Leu Arg
 115 120 125
 Tyr Asn Ala Pro Glu Phe Tyr Arg Leu Gly Leu Gly Asp Pro Tyr Cys
 130 135 140
 Ile Ser Ala Ile Ser Gly Ser Gly Thr Gly Asp Leu Met Asp Leu Ile
 145 150 155 160
 Val Ser Lys Phe Lys Lys Glu Ser Asp Glu Ile Leu Asp Glu Asp Ile
 165 170 175
 Pro Arg Phe Ala Val Val Gly Arg Pro Asn Ala Gly Lys Ser Ser Ile
 180 185 190
 Val Asn Ala Phe Ile Gly Glu Glu Arg Asn Ile Val Thr Glu Ile Ala
 195 200 205
 Gly Thr Thr Arg Asp Ser Ile Tyr Thr Arg Tyr Asn Lys Phe Gly Phe
 210 215 220
 Asp Phe Tyr Leu Val Asp Thr Ala Gly Ile Arg Lys Lys Asn Lys Val
 225 230 235 240
 Asn Glu Asp Leu Glu Tyr Tyr Ser Val Val Arg Ser Ile Arg Ala Ile
 245 250 255
 Glu Gly Ala Asp Val Cys Ile Leu Met Val Asp Ala Thr Arg Gly Ile
 260 265 270
 Glu Ser Gln Asp Leu Asn Ile Phe Ser Leu Ile Gln Lys Asn Ser Lys
 275 280 285
 Gly Leu Val Val Val Val Asn Lys Trp Asp Leu Val Glu Asn Lys Thr
 290 295 300
 Asp Lys Val Met Lys Thr Phe Glu Glu Ala Ile Arg Ser Arg Phe Ala
 305 310 315 320
 Pro Phe Val Asp Phe Pro Ile Val Phe Ala Ser Ala Leu Thr Lys Gln
 325 330 335
 Arg Ile Leu Lys Val Leu Glu Glu Ala Arg Lys Val Tyr Glu Asn Arg
 340 345 350
 Met Ile Lys Ile Pro Thr Ala Arg Leu Asn Glu Glu Met Leu Pro Leu
 355 360 365

Ile Glu Ala Tyr Pro Pro Pro Ala Thr Lys Gly Lys Tyr Ile Lys Ile
 370 375 380
 Lys Tyr Val Thr Gln Leu Pro Asn Thr Gln Val Pro Ser Phe Val Phe
 385 390 395 400
 Phe Ala Asn Leu Pro Gln Tyr Val Lys Glu Pro Tyr Arg Arg Phe Leu
 405 410 415
 Glu Asn Lys Met Arg Glu Lys Trp Asp Leu Ser Gly Thr Pro Ile Asn
 420 425 430
 Ile Tyr Ile Arg Gln Lys
 435

<210> 8130
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 8130

Asn Asp Met Lys Lys Ile Leu Val Gly Thr Leu Thr Cys Leu Phe Gly
 1 5 10 15
 Ala Ile Ala Gly His Ala Gln Gln Asp Pro Val Leu Met Arg Ile Asn
 20 25 30
 Gly Gln Asp Ile Thr Arg Ser Glu Phe Glu Arg Phe Cys His Arg Asn
 35 40 45
 Lys Pro Ser Gly Ile Ala Gly Lys Glu Thr Leu Lys Arg Cys Ala Asp
 50 55 60
 Leu Phe Val Asp Met Lys Leu Lys Leu Ser Ala Ala Gln Lys Ala Gly
 65 70 75 80
 Leu Asp Thr Val Ser Asp Phe Arg Thr Glu Met Glu Asn Tyr His Arg
 85 90 95
 Ala Leu Ser Arg Ser Tyr Leu Thr Asp Ser Ala Thr Asp Glu Ala Tyr
 100 105 110
 Ala Lys Lys Leu Tyr Asp Gln Met Lys Thr Arg Ser Ala Ala Gly Glu
 115 120 125
 Val Lys Val Met Arg Ile Phe Arg Tyr Leu Pro Gln Thr Ala Leu Pro
 130 135 140
 His His Leu Arg Glu Ala Gln Ile Leu Met Asp Ser Leu Tyr His Val
 145 150 155 160
 Leu Glu Thr His Pro Asp Ile Asp Phe Arg Thr Leu Val Asn Lys Tyr
 165 170 175
 Ser Asp Asp Lys Lys Glu Phe Trp Met Gly Trp Leu Gln Thr Ser Gln
 180 185 190
 Glu Phe Glu Glu Val Ala Phe Ser Leu Lys Asp Gly Glu Tyr Ser Lys
 195 200 205
 Pro Phe Phe Thr Pro Lys Gly Ile Gln Ile Ile Lys Val Thr Gly Arg
 210 215 220
 Arg Glu Ile Pro Pro Phe Glu Gln Ile Arg Gly Glu Leu Ile His Lys
 225 230 235 240
 Leu Ser Arg Arg Pro Gly Thr Asp Lys Glu Ile Glu Leu Trp Val Asn
 245 250 255
 Lys Leu Lys Ser Thr Cys Gln Tyr Thr Pro Asp Lys Ala Gly Met Glu
 260 265 270
 Glu Leu Leu Ala Ser Gly Arg Thr Ser Arg Thr Leu Phe Thr Leu Asp
 275 280 285
 Gly Lys Ser Phe Thr Gly Lys Asp Phe Glu Arg Phe Ala Asp Ala His
 290 295 300
 Pro Met Gly Ile Lys Arg Gln Leu Asn Ala Phe Val Val Lys Ser Ile
 305 310 315 320
 Leu Asp Tyr Glu Asn Asn Arg Leu Glu Gln Lys Tyr Pro Asp Phe Arg
 325 330 335

Leu Ala Leu Gln Gln Arg Arg Asp Asp Leu Leu Leu Ala Ala Ile Thr
 340 345 350
 Arg Arg Glu Ser Arg Gln Val Ser Leu Ser Asp Ser Val Ala Leu Lys
 355 360 365
 Ala Phe Phe Lys Glu His Arg Thr Asp Tyr Asn Trp Asp Ser Pro Arg
 370 375 380
 Tyr Arg Gly Ala Val Leu His Gly Thr His Lys Lys Thr Leu Lys Ser
 385 390 395 400
 Ala Arg Lys Phe Leu Lys Lys Leu Pro Glu Glu Glu Trp Lys Asp Ala
 405 410 415
 Ile Arg Leu Thr Phe Asn Thr Pro Ala Ser Pro Ala Thr Ile Arg Ile
 420 425 430
 Glu Gln Gly Thr Phe Ala Glu Gly Asp Asn Val Phe Val Asp Lys Leu
 435 440 445
 Val Phe Lys Lys Gly Asp Phe Glu Pro Leu Lys Ser Tyr Pro Phe Thr
 450 455 460
 Val Val Leu Gly Glu Lys Lys Lys Gly Pro Glu Ser Tyr His Glu Ile
 465 470 475 480
 Ile Pro Gln Leu Ile Arg Asp Tyr Gln Asn His Leu Asp Ala Leu Trp
 485 490 495
 Thr Glu Arg Leu Arg Ala Ser Ala Lys Val Glu Ile Asn Gln Glu Val
 500 505 510
 Leu Lys Thr Val Asn Asn His
 515

<210> 8131

<211> 627

<212> PRT

<213> B.fragilis

<400> 8131

Arg Gln Met Lys Ser Ser Tyr Ile Cys Cys Val Leu Leu Phe Val Leu
 1 5 10 15
 Phe Leu Val Ser Cys Thr Asp Gly Arg Ser Glu Gly Gln Val Ala Arg
 20 25 30
 Leu Leu Arg Gln Ala Glu Met Cys Met Glu Glu Cys Pro Asp Ser Ala
 35 40 45
 Leu Val Tyr Leu His Gln Ile Pro Asp Pro Glu Lys Leu Thr Gly Glu
 50 55 60
 Asn Gln Ala Asp Tyr Cys Leu Leu Leu Thr Gln Ala Met Asp Lys Asn
 65 70 75 80
 Asp Leu Pro Leu Ser Ser Asp Ser Leu Ile Gln Ile Ala Val Gly Tyr
 85 90 95
 Tyr Ser Asn Gly Lys Asp Arg Leu Lys Lys Gly Lys Ala Ser Phe Tyr
 100 105 110
 Leu Gly Arg Val Lys Ser Ser Arg Gly Met Leu Glu Asp Ala Gln Lys
 115 120 125
 Tyr Phe Leu Glu Ala Leu Ser Ile Leu Asp Val Thr Asp Asn Leu Lys
 130 135 140
 Tyr Gln Ala Leu Val Arg Asn His Leu Gly Gln Leu Tyr Met Asn Leu
 145 150 155 160
 Asp Leu Tyr Gln Asp Ala Leu Ile Met Asn Ser Gln Ser Val Ser Leu
 165 170 175
 Phe Gln Gln Leu Thr Asp Thr Ala Asn Leu Val Tyr Ala Glu Arg Asp
 180 185 190
 Met Gly Arg Ile Tyr Leu Leu Glu Gly Arg Gln Asp Ser Ala Ser Leu
 195 200 205
 Tyr Tyr Gln Gln Ala Ile Asn Asp Ala Leu Ser Tyr Phe Lys Ser Asp
 210 215 220

Ile Tyr Lys Asp Ile Val Ser Glu Trp Gly Gln Ile Ser Met Tyr Leu
 225 230 235 240
 Glu Met Ser Pro Ser Ala Glu Gln Met Leu Leu Ser Asn Leu Glu Ser
 245 250 255
 Asp Leu Val Leu Asp Lys Thr Pro Val Cys Leu Ser Leu Gly Ile Tyr
 260 265 270
 Tyr Leu Ser Asn Lys Leu Tyr Ser Lys Ala Glu Gly Tyr Leu Leu Lys
 275 280 285
 Ala Ala Ala Ser Ser Arg Pro Tyr Thr Arg Val Ser Ala Tyr Lys Tyr
 290 295 300
 Leu Gly His Leu Glu Thr Arg Asn Leu Asp Leu Ile Tyr Trp Asp Gln
 305 310 315 320
 Tyr Glu Gln Ala Leu Asp Ser Leu Glu Arg Gln Asn Leu Ala Tyr Ala
 325 330 335
 Val Lys Glu Ile Gln Glu Lys Tyr Asn Asn Ala Ala Leu Gln Ala His
 340 345 350
 Thr Phe Lys Leu Glu Asn Glu Arg Leu His Ser Thr Ile Ser Tyr Leu
 355 360 365
 Ser Val Ile Leu Leu Leu Leu Ser Ile Thr Ser Val Ile Tyr Val Phe
 370 375 380
 Tyr Met Lys Glu Arg Arg Arg Arg Gln Ile Glu Lys Glu Glu Phe Asn
 385 390 395 400
 Arg Asn Met Lys Ala His Glu Gln Glu Arg Ala Arg Leu Leu Ala Glu
 405 410 415
 Leu Ser Asp Ser Lys Leu His Val Glu Lys Leu Glu Gln Leu Lys Ser
 420 425 430
 Glu Gln Lys Gln Ser Ser Leu Glu Val Gln Glu Lys Thr Asn Ala Leu
 435 440 445
 Leu Glu Gln Glu Lys Glu His Ser Cys Lys Ile Ser Gln Gln Leu Glu
 450 455 460
 Glu Leu Lys Lys Lys Trp Lys Asn Gln Leu Ser Ile Asn Ile Asp Leu
 465 470 475 480
 Arg Ala Arg Asn Lys Asp Leu Ser Tyr Lys Ile Lys Ser Leu Lys Asp
 485 490 495
 Ser Asp Met Glu Asn Thr Pro Gly Leu Tyr Ala Ser Ile Asn Leu Leu
 500 505 510
 Val Arg Ile Leu Thr Cys Asp Leu Ser Glu Ile Lys Thr Leu Lys Val
 515 520 525
 Asp Asp Trp Glu Gly Leu Phe Gln Cys Ile Asp Leu Leu Tyr Gly Asn
 530 535 540
 Ser Leu Arg Lys Phe Ile Asp Gln Tyr Gln Lys Gln His Asp Glu Glu
 545 550 555 560
 Leu Asp Arg Arg Val Val Ala Ile Cys Tyr Phe Glu Tyr Ile Lys Val
 565 570 575
 Lys His Ala Arg Gln Ala Ala Ile Leu Arg Val Ser Ala Gln Ala Leu
 580 585 590
 Ser Lys Arg Lys Gln Arg Leu Lys Ile Glu Leu Gly Val Pro Asp Met
 595 600 605
 Ala Ser Val Gly Arg Val Val Lys Pro Val Cys Pro Ser Asn Lys Lys
 610 615 620
 Glu Leu Met
 625

<210> 8132

<211> 571

<212> PRT

<213> B.fragilis

<400> 8132

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

[illegible]

<400> 8133																
Cys	Phe	Phe	Asp	Met	Lys	Ser	Gln	Arg	Leu	Gly	Leu	Gln	Pro	Ile	Lys	
1				5					10					15		
Asn	Tyr	Glu	Arg	Val	Val	Asn	Pro	Arg	Lys	Lys	Arg	Phe	His	Met	Ser	
			20					25					30			
Ser	Arg	Met	Asn	Ser	His	Gly	Lys	Ile	Ile	Ile	Thr	Lys	Ile	Ala	Asp	
		35					40					45				
Tyr	Glu	Ser	Asn	Tyr	Ile	Lys	Lys	Ala	Gly	Leu	Leu	Glu	Gly	Asp	Glu	
	50					55					60					
Ile	Ile	Ala	Ile	Asn	Glu	Ile	Pro	Ile	Lys	Met	Ile	Thr	Ile	Glu	Glu	
65					70					75					80	
Asn	Thr	Lys	Leu	Asn	Arg	Arg	Gly	Gln	Gly	Lys	Ser	Tyr	Lys	Ile	Pro	
				85					90					95		
Val	Val	Ile	Asp	Arg	Asn	Glu	Val	Gln	Gly	Asp						
			100					105								

[illegible]

<400> 8135
Ile Lys Thr Glu Leu Met Glu Lys Ile Asn Ala Val Ile Thr Gly Val

1 5 10 15
 Gly Gly Tyr Val Pro Asp Tyr Val Leu Thr Asn Asp Glu Ile Ser Lys
 20 25 30
 Met Val Asp Thr Asn Asp Glu Trp Ile Met Thr Arg Ile Gly Val Lys
 35 40 45
 Glu Arg Arg Ile Leu Asn Glu Glu Gly Leu Gly Thr Ser Tyr Met Ala
 50 55 60
 Arg Lys Ala Ala Lys Gln Leu Met Lys Lys Thr Gly Ser Asn Pro Asp
 65 70 75 80
 Asp Ile Asp Leu Val Ile Val Ala Thr Thr Pro Asp Tyr His Phe
 85 90 95
 Pro Ser Thr Ala Ser Ile Leu Cys Asp Lys Leu Gly Leu Lys Asn Ala
 100 105 110
 Phe Ala Phe Asp Leu Gln Ala Ala Cys Ser Gly Phe Leu Phe Leu Met
 115 120 125
 Glu Thr Ala Ala Asn Phe Ile Arg Ser Gly Arg Tyr Lys Lys Ile Ile
 130 135 140
 Ile Val Gly Ala Asp Lys Met Ser Ser Met Val Asp Tyr Thr Glu Arg
 145 150 155 160
 Ala Thr Cys Pro Ile Phe Gly Asp Gly Ala Ala Ala Phe Met Val Glu
 165 170 175
 Pro Thr Thr Glu Asp Leu Gly Ile Met Asp Ala Ile Leu Arg Thr Asp
 180 185 190
 Gly Lys Gly Leu Pro Phe Leu His Met Lys Ala Gly Gly Ser Val Cys
 195 200 205
 Pro Pro Ser Tyr Phe Thr Val Asp Asn Lys Met His Tyr Ile His Gln
 210 215 220
 Glu Gly Arg Thr Val Phe Lys Tyr Ala Val Ser Asn Met Ser Asp Val
 225 230 235 240
 Ser Ala Ala Ile Ala Glu Lys Asn Gly Leu Thr Lys Asp Asn Ile Asp
 245 250 255
 Trp Ile Val Pro His Gln Ala Asn Met Arg Ile Ile Glu Ala Val Ala
 260 265 270
 His Arg Met Glu Val Pro Met Glu Lys Val Leu Val Asp Ile Gln His
 275 280 285
 Tyr Gly Asn Thr Ser Ala Gly Thr Leu Pro Leu Cys Ile Trp Asp Phe
 290 295 300
 Glu Glu Lys Leu Lys Lys Gly Asp Asn Ile Ile Phe Thr Ala Phe Gly
 305 310 315 320
 Ala Gly Phe Thr Trp Gly Ala Val Tyr Val Lys Trp Gly Tyr Asp Gly
 325 330 335
 Lys Lys Glu

<210> 8136

<211> 130

<212> PRT

<213> B.fragilis

<400> 8136

Ser Ile Ser Phe Ser Ile Ser Ile Thr Arg Phe Leu Leu Pro Ala Gln
 1 5 10 15
 Arg Arg Phe Cys Lys Leu Ser Val Ser Leu Ile Leu Leu Leu Leu Asn
 20 25 30
 His Leu Pro Glu Ser Phe Ile Ser Phe Ile Ser Phe Phe Ile Ile Phe
 35 40 45
 Thr Met Asn Ile Tyr Val Gly Asn Leu Ser Tyr Arg Val Lys Glu Ala
 50 55 60
 Asp Leu Gln Gln Val Met Glu Asp Tyr Gly Thr Val Thr Ser Cys Lys

65					70					75				80
Val	Ile	Met	Asp	Arg	Glu	Thr	Gly	Lys	Ser	Lys	Gly	Phe	Gly	Val
				85					90				95	
Glu	Ile	Ala	Asp	Asp	Ala	Ala	Gly	Ala	Lys	Ala	Ile	Ala	Glu	Leu
			100					105					110	Asn
Gly	Ala	Glu	Tyr	Glu	Gly	Arg	Thr	Met	Val	Val	Lys	Glu	Ala	Arg
		115					120					125		Pro
Arg	Glu													
	130													

<210> 8137
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8137															
Asn	Arg	Leu	Leu	Arg	Asn	Lys	Asp	Phe	Ser	Leu	Ser	Val	Ile	Gly	Ile
1				5					10					15	
Asp	Lys	Ala	Arg	Asp	Tyr	Pro	Val	Lys	Cys	Ile	Glu	Ile	Arg	Glu	Val
			20					25					30		
Ala	Asp	Val	Glu	Tyr	Ile	Pro	Leu	Glu	Ala	Val	Ser	Ser	Ser	Leu	Leu
		35					40					45			
Ile	Asn	Asp	Ile	Trp	Gly	Tyr	Tyr	Val	Phe	Tyr	Leu	Ser	Lys		
	50					55					60				

<210> 8138
 <211> 257
 <212> PRT
 <213> B.fragilis

<400> 8138															
Gln	Arg	Ile	Trp	Lys	Lys	Ala	Ser	Lys	Met	Val	Leu	Arg	Thr	Glu	Asp
1				5					10					15	
Leu	Val	Lys	Lys	Tyr	Gly	Lys	Arg	Thr	Val	Val	Ser	His	Val	Ser	Ile
			20					25					30		
Asn	Val	Lys	Gln	Gly	Glu	Ile	Val	Gly	Leu	Leu	Gly	Pro	Asn	Gly	Ala
		35					40					45			
Gly	Lys	Thr	Thr	Ser	Phe	Tyr	Met	Thr	Val	Gly	Leu	Ile	Thr	Pro	Asn
	50					55					60				
Glu	Gly	Arg	Ile	Phe	Leu	Asp	Asp	Leu	Glu	Ile	Thr	Lys	Tyr	Pro	Val
65					70				75					80	
Tyr	Lys	Arg	Ala	Gln	Thr	Gly	Ile	Gly	Tyr	Leu	Ala	Gln	Glu	Ala	Ser
				85				90						95	
Val	Phe	Arg	Gln	Met	Thr	Val	Glu	Asp	Asn	Ile	Ala	Ser	Val	Leu	Glu
			100					105					110		
Met	Thr	Asn	Lys	Pro	Leu	Asp	Tyr	Gln	Lys	Asp	Lys	Leu	Glu	Ser	Leu
		115					120					125			
Ile	Ala	Glu	Phe	Arg	Leu	Gln	Lys	Val	Arg	Lys	Asn	Lys	Gly	Thr	Gln
	130					135					140				
Leu	Ser	Gly	Gly	Glu	Arg	Arg	Arg	Thr	Glu	Ile	Ala	Arg	Cys	Leu	Ala
145					150				155					160	
Ile	Asp	Pro	Lys	Phe	Ile	Met	Leu	Asp	Glu	Pro	Phe	Ala	Gly	Val	Asp
			165					170						175	
Pro	Ile	Ala	Val	Glu	Asp	Ile	Gln	Gln	Ile	Val	Trp	Lys	Leu	Lys	Asp
		180					185						190		
Lys	Asn	Ile	Gly	Ile	Leu	Ile	Thr	Asp	His	Asn	Val	Gln	Glu	Thr	Leu
	195					200						205			
Ser	Ile	Thr	Asp	Arg	Ala	Tyr	Leu	Leu	Phe	Glu	Gly	Lys	Ile	Leu	Phe
	210					215					220				

Gln Gly Thr Pro Glu Glu Leu Ala Glu Asn Lys Ile Val Arg Glu Lys
 225 230 235 240
 Tyr Leu Ser Asn Ser Phe Val Leu Arg Arg Lys Asp Phe Gln Leu Lys
 245 250 255
 Asp

<210> 8139
 <211> 224
 <212> PRT
 <213> B.fragilis

<400> 8139
 Leu Met Asn Arg Thr Phe Cys Phe Val Pro Val Arg Lys Gly Ser Arg
 1 5 10 15
 Gly Ile Pro Gly Lys Asn Leu Arg Leu Leu Gly Asp Lys Pro Leu Val
 20 25 30
 Cys Trp Ile Ile Asp Thr Ile Leu Ala Ser Gly Ile Ala Asp Glu Val
 35 40 45
 Cys Val Ala Thr Asn Cys Asp Glu Met Glu Ser Leu Ile Arg Gly Arg
 50 55 60
 Tyr Lys Gly Val Val Gln Ile Phe Arg Arg Ser Glu Trp Ser Ala Arg
 65 70 75 80
 Asp Glu Ala Ser Ser Leu Glu Val Val Gln Glu Tyr Leu Asn Tyr Arg
 85 90 95
 Lys Pro Asp Arg Asn Asp Asp Phe Ile Leu Leu Gln Ala Thr Ser Pro
 100 105 110
 Phe Thr Thr Ala Gln Glu Leu Arg Gly Leu Val Glu Glu Met Lys Arg
 115 120 125
 Gly Glu Ala Asp Ser Tyr Val Ala Cys Cys Arg Leu Lys Lys Phe Arg
 130 135 140
 Trp Ser Asp Glu Gly Arg Pro Leu Asp Tyr Ser Phe Glu Thr Lys Pro
 145 150 155 160
 Arg Arg Gln Glu Tyr Lys Gly Phe Leu Ile Glu Ser Gly Ala Phe Tyr
 165 170 175
 Ala Ser Thr Val Gly Arg Ile Leu Asp Ser Gly Gln Leu Leu Ser Gly
 180 185 190
 Val Val Lys Val Val Glu Val Gly Pro Ala Gly Met Ile Asp Val Asp
 195 200 205
 Glu Glu Ala Asp Trp Arg Leu Ala Glu His Tyr Ile Glu Thr Gly Leu
 210 215 220

<210> 8140
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 8140
 Ile Ile Val Arg Met Asn Val Ser Leu Gln Asn Ile Asp Lys Val Ser
 1 5 10 15
 Ala Leu Leu Thr Val Lys Leu Glu Lys Ala Asp Tyr Gln Pro Gln Val
 20 25 30
 Asp Lys Ser Leu Lys Asn Ile Arg Gln Lys Ala Gln Val Pro Gly Phe
 35 40 45
 Arg Pro Gly Met Val Pro Met Ser Leu Val Lys Lys Met Tyr Gly Lys
 50 55 60
 Ser Val Ile Ala Asp Glu Val Asn Lys Leu Leu Ser Glu Lys Val Tyr
 65 70 75 80
 Ala Tyr Ile Lys Glu Asn Ile Ile Asn Ile Leu Gly Asp Pro Met Pro

				85					90					95	
Ile	Glu	Glu	Lys	Gln	Pro	Asp	Ile	Asp	Phe	Asp	Thr	Lys	Glu	Glu	Phe
			100					105					110		
Glu	Phe	Val	Phe	Asp	Ile	Ala	Trp	Ala	Pro	Glu	Phe	Lys	Ala	Glu	Val
		115					120					125			
Ser	Asp	Gln	Asp	Lys	Val	Asp	Tyr	Tyr	Thr	Ile	Glu	Val	Pro	Asp	Glu
	130					135					140				
Met	Val	Glu	Asn	Gln	Ile	Lys	Ala	Tyr	Thr	Gln	Arg	Asn	Gly	Lys	Tyr
	145			150						155				160	
Glu	Lys	Val	Asp	Ala	Tyr	Glu	Glu	Asn	Asp	Met	Leu	Lys	Gly	Leu	Leu
			165					170					175		
Ala	Glu	Leu	Asp	Glu	Glu	Gly	Asn	Thr	Lys	Glu	Gly	Gly	Ile	Gln	Val
			180				185						190		
Glu	Gly	Ala	Val	Met	Met	Pro	Ser	Tyr	Met	Lys	Asn	Asp	Glu	Gln	Lys
		195					200					205			
Ala	Ile	Phe	Ala	Asn	Ala	Lys	Val	Asn	Asp	Val	Leu	Val	Phe	Asn	Pro
	210					215				220					
Asn	Thr	Ala	Tyr	Glu	Gly	Asn	Ala	Val	Glu	Met	Ala	Ser	Leu	Leu	Lys
	225			230					235					240	
Ile	Asp	Lys	Glu	Ala	Ala	Ala	Glu	Val	Lys	Gly	Asn	Phe	Ser	Phe	Gln
			245					250					255		
Val	Glu	Glu	Val	Thr	Arg	Phe	Val	Asn	Gly	Glu	Leu	Asn	Gln	Glu	Ile
			260					265					270		
Phe	Asp	Gln	Val	Phe	Gly	Lys	Asp	Val	Val	Lys	Thr	Glu	Glu	Glu	Phe
	275						280					285			
Arg	Ala	Lys	Val	Lys	Glu	Ser	Ile	Ala	Ala	Gln	Phe	Val	Ala	Asp	Ser
	290					295					300				
Asp	Tyr	Lys	Phe	Leu	Ile	Asp	Val	Arg	Lys	Val	Leu	Thr	Asp	Lys	Val
	305			310					315					320	
Gly	Lys	Leu	Glu	Phe	Pro	Asp	Ala	Leu	Leu	Lys	Arg	Val	Met	Leu	Val
			325					330					335		
Asn	Asn	Lys	Asp	Lys	Gly	Glu	Glu	Phe	Val	Asn	Glu	Asn	Tyr	Asp	Lys
			340					345					350		
Ser	Ile	Glu	Glu	Leu	Thr	Trp	His	Leu	Ile	Lys	Glu	Gln	Leu	Val	Lys
	355					360						365			
Glu	Asn	Asp	Ile	Lys	Val	Glu	Gln	Asp	Asp	Val	Ile	Asn	Met	Ala	Lys
	370					375				380					
Glu	Ala	Thr	Lys	Ala	Gln	Phe	Ala	Gln	Tyr	Gly	Met	Leu	Thr	Ile	Pro
	385			390					395					400	
Asp	Asp	Ile	Leu	Glu	Asn	Tyr	Ala	Lys	Glu	Met	Leu	Lys	Lys	Lys	Glu
			405					410					415		
Ser	Ile	Asp	Gly	Leu	Val	Asn	Arg	Val	Val	Glu	Thr	Lys	Leu	Ala	Ala
		420					425					430			
Ala	Leu	Lys	Gly	Lys	Val	Thr	Leu	Glu	Asn	Lys	Thr	Val	Ser	Met	Glu
		435				440					445				
Glu	Phe	Asn	Lys	Met	Phe	Glu									
	450					455									

<210> 8141

<211> 88

<212> PRT

<213> B.fragilis

<400> 8141

Ser	Leu	Pro	Arg	Ala	His	Ile	Asp	Gly	Gly	Val	Trp	His	Leu	Asp	Val
1				5				10					15		
Gly	Ser	Ser	His	Pro	Gly	Ala	Gly	Glu	Gly	Pro	Lys	Gly	Trp	Ala	Val
			20				25					30			
Arg	Pro	Leu	Lys	Trp	His	Ala	Ser	Trp	Val	Gln	Asn	Val	Val	Arg	Gln

35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 8142
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 8142
 Ser Leu Gln Arg Tyr Lys Lys Ser Pro Asn Val Met Tyr Tyr Leu Thr
 1 5 10 15
 Asn Phe His Leu Asn Leu Lys Leu Val Asp Ile Ile Arg Ala Thr Lys
 20 25 30
 Ile Arg Ile Ile Ile Leu Ile Thr Tyr Lys Leu Ser Val Asn Ile Arg
 35 40 45
 Ile Leu Asn Ser Ile Leu Phe Ile Thr Arg Phe Pro Tyr Ser Gln Gly
 50 55 60
 Gln Ser Arg Asn Arg Ala Ala Arg Arg Ser Leu Ser Phe Pro Pro Val
 65 70 75 80

<210> 8143
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 8143
 Cys Val Met Arg Ile Ile Ser Phe Ala Ala Ile Arg Asn Tyr Ala Lys
 1 5 10 15
 Lys His Ala Asp Ala Asp Val Pro Leu Arg Asp Trp Tyr Lys Lys Thr
 20 25 30
 Glu Lys Ala Asp Trp Ser Cys Leu Ala Asp Ile Lys Gln Thr Phe Asn
 35 40 45
 Ser Val Asp Tyr Val Gly Asn Asp Arg Phe Val Phe Asn Ile Lys Gly
 50 55 60
 Asn Asp Tyr Arg Leu Val Ala Met Ile Leu Phe Ala Ala Lys Lys Val
 65 70 75 80
 Phe Ile Arg Trp Ile Gly Thr His Lys Glu Tyr Asp Asn Lys Asp Cys
 85 90 95

<210> 8144
 <211> 260
 <212> PRT
 <213> B.fragilis

<400> 8144
 Thr Phe Asn Gly Met Ile Glu Val Lys Gly Leu Tyr Lys Ser Phe Glu
 1 5 10 15
 Gly Lys Thr Val Leu His Asn Ile Asp Ala Thr Phe Glu Asn Gly Lys
 20 25 30
 Thr Ser Leu Ile Ile Gly Gln Ser Gly Ser Gly Lys Thr Val Leu Met
 35 40 45
 Lys Cys Ile Val Gly Leu Leu Thr Pro Glu Lys Gly Glu Val Leu Tyr
 50 55 60
 Asp Gly Arg Asn Phe Leu Ala Met Gly Lys Lys Glu Lys Lys His Leu

65					70					75				80
Arg	Arg	Glu	Met	Gly	Met	Ile	Phe	Gln	Ser	Ala	Ala	Leu	Phe	Asp
				85					90					95
Met	Ser	Val	Leu	Asp	Asn	Val	Met	Phe	Pro	Leu	Asn	Met	Phe	Gly
			100					105					110	
Asp	Thr	Leu	Arg	Glu	Gln	Thr	Lys	Arg	Ala	Met	Phe	Cys	Leu	Asp
		115					120					125		
Val	Asn	Leu	Thr	Glu	Ala	Lys	Asp	Lys	Phe	Pro	Gly	Glu	Ile	Ser
	130					135					140			
Gly	Met	Gln	Lys	Arg	Val	Ala	Ile	Ala	Arg	Ala	Ile	Ala	Leu	Asn
145					150				155					160
Gln	Tyr	Leu	Phe	Cys	Asp	Glu	Pro	Asn	Ser	Gly	Leu	Asp	Pro	Lys
			165					170						175
Ser	Leu	Val	Ile	Asp	Asp	Leu	Ile	His	Asp	Ile	Thr	Arg	Glu	Tyr
		180						185					190	
Met	Thr	Thr	Ile	Ile	Asn	Thr	His	Asp	Met	Asn	Ser	Val	Met	Gly
		195					200					205		
Gly	Glu	Lys	Ile	Ile	Tyr	Ile	Tyr	Gln	Gly	Thr	Lys	Glu	Trp	Glu
	210					215					220			
Thr	Lys	Asp	Asp	Ile	Phe	Thr	Ser	Thr	Asn	Glu	Gln	Leu	Asn	Asn
225					230				235					240
Ile	Phe	Ala	Ser	Asp	Leu	Leu	Arg	Lys	Val	Lys	Asp	Val	Glu	Ile
			245					250					255	
Asn	Leu	Glu	Gly											
			260											

<210> 8145

<211> 84

<212> PRT

<213> B.fragilis

<400> 8145

Val	Ser	Thr	Gly	Arg	Arg	Pro	Ile	Ile	Ser	Gly	Ile	Ser	Pro	Asn	Asp
1				5					10					15	
Phe	Lys	Ser	Cys	Gly	Ala	Ile	Tyr	Cys	Ile	Met	Leu	Phe	Leu	Ser	Ile
			20					25					30		
Val	Ala	Val	Leu	Arg	Glu	Ala	Leu	Tyr	Pro	Thr	Thr	Trp	Val	Leu	Arg
		35					40					45			
Arg	Trp	Ala	Ile	Phe	Phe	Ser	Met	Pro	Ser	Asn	Ala	Pro	Pro	Gln	Met
	50					55					60				
Lys	Arg	Met	Phe	Phe	Val	Phe	Thr	Gly	Ile	Ile	Phe	Trp	Ser	Gly	Cys
65					70				75					80	
Leu	Arg	Pro	Pro												

<210> 8146

<211> 410

<212> PRT

<213> B.fragilis

<400> 8146

Ser	Thr	Leu	Ile	Phe	Asp	Val	Tyr	Asn	Leu	Ile	Asn	Met	Arg	Met	Asn
1				5					10					15	
Lys	Tyr	Trp	Gly	Thr	Trp	Ile	Val	Phe	Ile	Gly	Val	Phe	Phe	His	Ser
			20					25					30		
Cys	Lys	Gln	Glu	Val	Lys	Gln	Asn	Ile	Ser	Phe	Tyr	Ser	Val	Asp	
		35				40					45				
Leu	Leu	Glu	Met	Glu	Lys	Met	Lys	Gly	Glu	Glu	Ile	Leu	Leu	Ser	Asp
	50					55					60				

Leu Ile Glu Ser Leu Glu Ile Ile Lys Leu Asp Asn Arg Glu Glu Ala
 65 70 75 80
 Leu Ile Ala Thr Tyr Pro Phe Gly Ile Asp Val Ser Ser Asn Tyr Ile
 85 90 95
 Leu Ile Glu Pro Asp Gly Val Ser Ala Leu Lys Leu Phe Thr Arg Lys
 100 105 110
 Gly Arg Tyr Val Ala Asp Ile Gly Gly Val Gly Gln Gly Pro Gly Glu
 115 120 125
 Tyr Lys Tyr Ala Val Asn Arg Phe Leu Asp Glu Lys Gln Gly Arg Val
 130 135 140
 Ala Ile Ala Glu Asn Lys Lys Ile Leu Phe Phe Asp Leu Lys Gly Gln
 145 150 155 160
 Phe Leu Ser Glu Glu Ser Ile Ser Leu Pro Glu Thr Ile Thr Lys Ser
 165 170 175
 Ser Ile Trp Ile Asp Leu Glu Asn Glu Lys Ala Val Val Val Val Leu
 180 185 190
 Pro Phe Ala Asp Ile Gly Asn Pro Lys Ala Pro Ile Ser Lys Asn Leu
 195 200 205
 Cys Trp Val Gln Asp Phe Lys Gly Asn Ile Leu Gln Lys Ile Ser Ala
 210 215 220
 Ile Asn Tyr Ala Ile Val Pro Asp Tyr Ser Asn Glu Val Leu Ala Pro
 225 230 235 240
 Arg Asn Val Asp Ala Tyr Ser Phe Ser Leu Cys Gln Val Val Gly Arg
 245 250 255
 Thr Arg Pro Asp Thr Leu Tyr His Tyr Asp Ile Ala Asn Asn Leu Leu
 260 265 270
 Lys Pro Tyr Phe Thr Leu Asp Asn Val Met Gln Glu Asp Lys Tyr Ile
 275 280 285
 Val Thr Ser Leu Tyr Glu Thr Pro Glu Tyr Tyr Trp Ser Arg Val Thr
 290 295 300
 Ile Gly Pro Ala Lys Val Leu Ser Asp Gly Ala Pro Val Arg Met Thr
 305 310 315 320
 Val Phe Asn Val Arg Val Ser Lys Lys Asp Gly Ser Val Lys Arg Ile
 325 330 335
 Asp Arg Phe Thr Asn Asp Phe Leu Gly Leu Ser Tyr Pro Phe Leu Thr
 340 345 350
 Met Arg Asn Gly Tyr Val Cys Ile Thr Tyr Glu Pro Leu Glu Leu Met
 355 360 365
 Glu Ala Leu Asp Lys Val Leu Ala Gln Thr Asp Leu Lys Pro Asp Val
 370 375 380
 Arg Lys Arg Ala Thr Asp Leu Arg Asn Ser Leu His Glu Asn Asp Asn
 385 390 395 400
 Asp Ile Leu Ile Ile Gly Lys Leu Lys Gln
 405 410

<210> 8147

<211> 403

<212> PRT

<213> B.fragilis

<400> 8147

Arg Glu Tyr Met Lys Lys Tyr Leu Tyr Phe Ile Phe Phe Val Thr Leu
 1 5 10 15
 Trp Ser Cys Ser Ala Asp Lys Val Asn Val Lys Ser Glu Asp Asn Ser
 20 25 30
 Phe Tyr Ser Val Asp Leu Arg Ile Ile Glu Lys Thr Lys Gly Thr Val
 35 40 45
 Met Ser Leu Gly Asp Leu Met Glu Ser Tyr Glu Ile Ile Arg Leu Asp
 50 55 60

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Asn Arg Asp Glu Ala Leu Ile Lys Thr Tyr Pro Tyr Gly Val Tyr Val
65          70          75          80
Thr Asp Asn Tyr Ile Leu Leu Arg Pro Ala Asp Val Val Ser Pro Val
85          90          95
Lys Leu Phe Thr Arg Lys Gly Arg Tyr Val Ala Asp Ile Gly Gly Val
100         105         110
Gly Gln Gly Pro Gly Glu Tyr Leu Tyr Leu Phe Ser Trp Leu Val Asp
115         120         125
Glu Lys Glu Asn Arg Ile Tyr Leu Gly Pro Gly Arg Ala Asp Lys Val
130         135         140
Leu Val Tyr Asp Leu Lys Gly Asn Tyr Leu Pro Asp Glu Val Ile Arg
145         150         155         160
Phe Gly Glu Ile Val His Lys Ser Gln Ile Trp Val Asp Tyr Asp Lys
165         170         175
Lys Asn Val Val Val Val Thr Leu Pro Phe Ser Ala Asn Val Asn Ser
180         185         190
Asn Phe Ala Ile Asn Lys Asn Val Cys Trp Val Gln Asn Arg Asp Gly
195         200         205
Asp Ile Val His Arg Ile Pro Val Asn His Tyr Gly Leu Ile Gly Asp
210         215         220
Tyr Ser Asn Ala Leu Val Ala Arg Arg Asn Val Asp Ala Ile Ser Phe
225         230         235         240
Ser Ile Ser Glu Ile Pro Met Leu Arg Thr Arg Pro Asp Thr Leu Tyr
245         250         255
His Tyr Asp Ala Val Lys Asn Ile Ile Thr Pro Cys Phe Thr Ile Asp
260         265         270
His Val Val Ser Glu Asn Gln Ser Ala Ser Thr Val Leu Tyr Glu Thr
275         280         285
Ser Arg Ser Tyr Trp Ala Tyr Val Thr Leu Tyr Pro Asn Asp Ile Ser
290         295         300
Ser Ser Ala Phe Ser Val Arg Leu Thr Thr Phe Asn Val Cys Val Ser
305         310         315         320
Lys Lys Asp Gly Asn Val Arg Arg Ile Asp Arg Phe Thr Asp Pro Leu
325         330         335
Leu Gly Leu Ser His Leu Phe Leu Met Met Asn Asn Gly Tyr Ile Cys
340         345         350
Ile Ser Tyr Asp Pro Leu Glu Leu Met Asp Ala Leu Asp Lys Val Leu
355         360         365
Thr Gln Thr Asp Leu Glu Leu Asp Val Arg Lys Arg Ala Thr Asp Leu
370         375         380
Arg Asn Ser Leu His Glu Asn Asp Asn Asp Ile Leu Ile Ile Gly Lys
385         390         395         400
Leu Lys Gln

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<210> 8148

<211> 83

<212> PRT

<213> B.fragilis

<400> 8148

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Ile Leu Asn Ile Met Lys Thr Leu Arg Arg Ile Lys Leu Asn Ser Leu
1          5          10          15
Ser Gln Glu Asp Leu Ala Asp Arg Glu Met Asn Met Leu Arg Gly Gly
20         25         30
Ser Asn Cys Ser Cys Gly Cys Met Gly Val Ser Ser Lys Ala Ser Asn
35         40         45
Leu Glu Gly Asn Lys Asp Cys Gly Tyr Pro Leu Ser Cys Thr Cys Gly
50         55         60

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Cys Thr Gly Pro Tyr Ala Leu Ala Ala Asn Gln Glu Ala Asn Lys Gly
 65 70 75 80
 Ala Gly Ile

<210> 8149
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 8149
 Ser Val Ser Ile Ile Ile Leu Val Lys Phe Arg Phe Met Asp Lys Ile
 1 5 10 15
 Tyr Leu Trp Leu Leu Leu Ile Ser Cys Ser Cys Ser His Thr Lys
 20 25 30
 Glu Lys Val Ser Asn Asp Met Asp Ser Ser Leu Cys Val Ile Asp Val
 35 40 45
 Thr Cys Glu Tyr Pro Val Glu Lys Val Asn Ile His Asp Val Ala Asp
 50 55 60
 Val Glu Tyr Val Pro Leu Glu Thr Thr Arg Asn Ser Leu Leu Ala Ser
 65 70 75 80
 Asp Cys Ser Val Phe Arg Ile Ser Asp Asp Tyr Ile Thr Val Ala Ser
 85 90 95
 Gly Val Asp Asn Gly Asn Ile Phe Phe Phe Asn Arg Lys Gly Arg Tyr
 100 105 110
 Leu Trp Thr Phe Asn Arg Arg Gly Ser Ala Glu Glu Tyr Ser Ser
 115 120 125
 Ile Thr Ala Trp Asp Ala Asp Phe Gly Met Gln Glu Ile Tyr Ile Tyr
 130 135 140
 Asp Ser Phe Arg Lys Lys Ile Tyr Thr Leu Ile Pro Gln His Tyr Asn
 145 150 155 160
 Leu Thr Leu Phe Ile Ser Ser
 165

<210> 8150
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 8150
 Leu Arg Ile Leu Gly Tyr Ile Tyr Ser Phe Asp Gly Arg Tyr Lys Arg
 1 5 10 15
 Ser His Ala Leu Pro Met Lys Asp Cys Thr Phe Ile Asp Leu Tyr Asn
 20 25 30
 Tyr Asp Lys Asp Tyr Leu Ile Gly Tyr Asn Arg Phe Tyr Asp Phe Arg
 35 40 45
 Lys Lys Lys Lys Val Asp Thr His Pro Tyr Tyr Leu Ile Asp Lys Gln
 50 55 60
 Ser Gly Glu Met Ser Ser Ile Gly Ile Val Val Asp Lys Pro Ile Ser
 65 70 75 80
 Glu Lys Val His Thr Glu Ile Val Lys Phe Pro Gly Gly Ala Tyr Lys
 85 90 95
 Asp Gln Val Leu Phe Leu Ile Thr Ala Leu Ile Lys Asn Gly Asp Ala
 100 105 110
 Phe Leu Ile Ala Asp Tyr Ala Leu Asp Thr Ile Tyr Ser Tyr Arg His
 115 120 125
 His Lys Leu Val Pro Ile Ala Val Gln Thr Pro Ser Val Tyr Ala Ser
 130 135 140
 Asp Pro Pro Val Ile Val Ala Cys Glu Leu Tyr Thr Asp Ser Tyr Leu

145 150 155 160
 His Phe Arg Ile Ile Pro Met Tyr Tyr Asn Pro Ser Ala Pro Met Ser
 165 170 175
 Pro Met Ala Asp Ala Pro Glu Leu Val Leu Asn Arg His Thr Gly Lys
 180 185 190
 Ile Ala Glu Trp Lys Met Tyr Asp Tyr Asn Tyr Ser Ser Asp Ile Glu
 195 200 205
 Arg Pro Val Pro Thr Met Ile Leu Gln Ser Ala Asp Arg Glu Asn Tyr
 210 215 220
 Gly Ile Ser Met Phe Thr Ala Glu Arg Leu Ile Glu Gln Tyr Gln Ala
 225 230 235 240
 Gly Gly Leu Lys Gly Glu Leu Lys Asp Ile Ala Ser Arg Leu Ser Ile
 245 250 255
 Asp Asp Asn Asp Ile Leu Met Ile Cys Lys Tyr Lys
 260 265

<210> 8151
 <211> 418
 <212> PRT
 <213> B.fragilis

<400> 8151
 Glu Ile Asn Met Ala Glu Ser Lys Asn Asn Lys Lys Arg Cys Ser Phe
 1 5 10 15
 Cys Gly Arg Ser Glu Asn Glu Val Gly Phe Leu Ile Thr Gly Met Asn
 20 25 30
 Gly Tyr Ile Cys Asp Ser Cys Ala Thr Gln Ala Tyr Glu Ile Thr Gln
 35 40 45
 Glu Ala Met Gly Ala Gly Lys Gln Ser Ala Gly Ala Thr Arg Leu Asn
 50 55 60
 Leu Lys Glu Leu Pro Lys Pro Val Glu Ile Lys Asn Phe Leu Asp Gln
 65 70 75 80
 Tyr Val Ile Gly Gln Asp Asp Ala Lys Arg Phe Leu Ala Val Ser Val
 85 90 95
 Tyr Asn His Tyr Lys Arg Leu Leu Gln Lys Asp Ser Gly Asp Asp Val
 100 105 110
 Glu Ile Glu Lys Ser Asn Ile Ile Met Val Gly Ser Thr Gly Thr Gly
 115 120 125
 Lys Thr Leu Leu Ala Arg Thr Ile Ala Lys Leu Leu His Val Pro Phe
 130 135 140
 Thr Ile Val Asp Ala Thr Val Leu Thr Glu Ala Gly Tyr Val Gly Glu
 145 150 155 160
 Asp Ile Glu Ser Ile Leu Thr Arg Leu Leu Gln Val Ala Asp Tyr Asn
 165 170 175
 Val Pro Glu Ala Glu Gln Gly Ile Val Phe Ile Asp Glu Ile Asp Lys
 180 185 190
 Ile Ala Arg Lys Gly Asp Asn Pro Ser Ile Thr Arg Asp Val Ser Gly
 195 200 205
 Glu Gly Val Gln Gln Gly Leu Leu Lys Leu Leu Glu Gly Ser Val Val
 210 215 220
 Asn Val Pro Pro Gln Gly Gly Arg Lys His Pro Asp Gln Lys Met Ile
 225 230 235 240
 Pro Val Asn Thr Lys Asn Ile Leu Phe Ile Cys Gly Gly Ala Phe Asp
 245 250 255
 Gly Ile Glu Lys Lys Ile Ala Gln Arg Leu Asn Thr His Val Val Gly
 260 265 270
 Tyr Asn Ala Ser Arg Lys Thr Ala Thr Ile Asp Lys Asn Asn Met Met
 275 280 285
 Gln Tyr Ile Ala Pro Gln Asp Leu Lys Ser Phe Gly Leu Ile Pro Glu

290 295 300
 Ile Ile Gly Arg Leu Pro Val Leu Thr Tyr Leu Asn Pro Leu Asp Arg
 305 310 315 320
 Asn Ala Leu Arg Ala Ile Leu Thr Glu Pro Lys Asn Ser Ile Ile Lys
 325 330 335
 Gln Tyr Ile Lys Leu Phe Glu Met Asp Gly Val Lys Leu Thr Phe Gln
 340 345 350
 Pro Glu Val Tyr Glu Tyr Ile Val Asp Lys Ala Val Glu Tyr Lys Leu
 355 360 365
 Gly Ala Arg Gly Leu Arg Ser Ile Val Glu Thr Ile Met Met Asp Val
 370 375 380
 Met Phe Glu Ile Pro Ser Glu Asp Gln Lys Glu Tyr Glu Val Thr Leu
 385 390 395 400
 Asp Tyr Ala Lys His Gln Leu Glu Lys Ala Asn Leu Ala Arg Leu Gln
 405 410 415
 Thr Ala

<210> 8152
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 8152
 Leu Cys Val Phe Leu Cys Leu Cys Val Leu Phe Cys Phe Phe Ala Val
 1 5 10 15
 Thr Leu Leu Ile Ile Glu Arg Asn Val Thr Met Asp Asp Phe Arg Lys
 20 25 30
 Tyr Ala Thr Lys His Leu Gly Met Asn Ala Met Val Leu Asp Asp Val
 35 40 45
 Ile Lys Ser Gln Ala Gly Tyr Leu Asn Pro Tyr Ile Leu Glu Glu Arg
 50 55 60
 Gln Leu Asn Val Thr Gln Leu Asp Val Phe Ser Arg Leu Met Met Asp
 65 70 75 80
 Arg Ile Ile Phe Leu Gly Thr Gln Ile Asp Asp Tyr Thr Ala Asn Thr
 85 90 95
 Leu Gln Ala Gln Leu Leu Tyr Leu Asp Ser Val Asp Pro Gly Lys Asp
 100 105 110
 Ile Ser Ile Tyr Ile Asn Ser Pro Gly Gly Ser Val Tyr Ala Gly Leu
 115 120 125
 Gly Ile Tyr Asp Thr Met Gln Phe Ile Ser Ser Asp Val Ala Thr Ile
 130 135 140
 Cys Thr Gly Met Ala Ala Ser Met Ala Ser Val Leu Leu Val Ala Gly
 145 150 155 160
 Ala Lys Gly Lys Arg Ser Ala Leu Pro His Ser Arg Val Met Ile His
 165 170 175
 Gln Pro Met Gly Gly Ala Gln Gly Gln Ala Ser Asp Ile Glu Ile Thr
 180 185 190
 Ala Arg Glu Ile Gln Lys Leu Lys Lys Glu Leu Tyr Thr Ile Ile Ala
 195 200 205
 Asp His Ser Gly Thr Ser Phe Asp Lys Val Trp Ala Asp Ser Asp Arg
 210 215 220
 Asp Tyr Trp Met Thr Ala Gln Glu Ala Lys Glu Tyr Gly Met Ile Asp
 225 230 235 240
 Glu Val Leu Ile Lys Lys
 245

<210> 8153
 <211> 139

<212> PRT
 <213> B.fragilis

<400> 8153

Leu	Lys	Lys	Ile	Ala	Met	Lys	His	Leu	Leu	Ser	Thr	Ile	Ile	Phe	Leu
1				5					10					15	
Phe	Ala	Val	Ile	Leu	Lys	Gly	Asn	Ala	Glu	Ser	Tyr	Ser	Phe	Pro	Ser
		20						25					30		
Pro	Asn	Glu	Ile	Asn	Ser	Val	Ile	Asn	Leu	Asp	Leu	Lys	Gly	Ile	Phe
		35						40				45			
Ser	Ser	Thr	His	Thr	Lys	Ser	Leu	Pro	Leu	Thr	Pro	Val	Glu	Ala	Ser
	50					55					60				
Leu	Val	Asp	Asn	Thr	Leu	Leu	Asn	Ile	Ser	Phe	Val	Val	His	Ser	Gly
65					70					75					80
Glu	Val	Thr	Val	Arg	Ile	Leu	Ser	Glu	Lys	Gly	Ile	Leu	Tyr	Ser	Ser
				85					90					95	
Cys	Ile	Asn	Ser	Asp	Gln	Gln	Asn	Ser	Leu	Ala	Ile	Ser	Val	Glu	Asp
			100					105					110		
Phe	Glu	Arg	Gly	Asp	Tyr	Lys	Leu	Glu	Leu	Thr	Thr	Pro	Ala	Gly	Gly
		115					120					125			
Tyr	Val	Tyr	Gly	Trp	Phe	Thr	Ile	Asn	Trp	Glu					
		130					135								

<210> 8154

<211> 459

<212> PRT

<213> B.fragilis

<400> 8154

Ile	His	Arg	Met	Lys	Lys	Phe	Val	Asn	Phe	Lys	Phe	Val	Val	Met	Phe
1				5					10					15	
Ala	Leu	Ala	Leu	Val	Ala	Asn	Val	Ala	Ser	Tyr	Ala	Gln	Asp	Asn	Val
		20						25					30		
Ile	Asp	Glu	Val	Val	Trp	Val	Ile	Gly	Asp	Glu	Ala	Ile	Leu	Lys	Ser
	35						40					45			
Asp	Val	Glu	Glu	Ala	Arg	Leu	Ala	Ala	Leu	Tyr	Glu	Gly	Arg	Lys	Phe
	50					55					60				
Asp	Gly	Asp	Pro	Tyr	Cys	Val	Ile	Pro	Glu	Glu	Leu	Ala	Val	Gln	Lys
65					70					75					80
Leu	Tyr	Met	His	Gln	Ala	Val	Leu	Asp	Ser	Ile	Glu	Val	Pro	Glu	Ala
			85					90						95	
Glu	Val	Ile	Gln	Arg	Val	Asp	Tyr	Gln	Ile	Ser	Asn	Tyr	Ile	Gln	Ala
			100					105					110		
Leu	Gly	Ser	Arg	Glu	Arg	Met	Glu	Ala	Glu	Phe	Asn	Lys	Thr	Ser	Thr
		115					120					125			
Gln	Ile	Arg	Glu	Ala	Met	Arg	Glu	Asn	Ala	Arg	Asp	Gly	Leu	Ile	Val
	130					135					140				
Gln	Arg	Met	Gln	Gln	Lys	Leu	Val	Gly	Asp	Ile	Lys	Val	Thr	Pro	Ala
145					150					155					160
Glu	Val	Arg	Arg	Tyr	Phe	Lys	Glu	Leu	Pro	Gln	Asp	Ser	Ile	Pro	Tyr
			165						170					175	
Val	Pro	Thr	Gln	Val	Glu	Val	Gln	Ile	Ile	Thr	Gln	Gln	Pro	Lys	Ile
		180						185					190		
Pro	Val	Ala	Glu	Ile	Glu	Asp	Val	Lys	Arg	Arg	Leu	Arg	Glu	Tyr	Thr
		195					200					205			
Asp	Arg	Ile	Asn	Lys	Gly	Glu	Ser	Asp	Phe	Ser	Thr	Leu	Ala	Leu	Leu
	210					215					220				
Tyr	Ser	Glu	Asp	Arg	Gly	Ser	Ala	Ile	Lys	Gly	Gly	Glu	Thr	Gly	Phe
225					230					235					240

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Met Gly Lys Gly Gln Met Val Pro Glu Tyr Ala Asn Val Ala Phe Asn
 245 250 255
 Leu Gln Asp Thr Lys Lys Ile Ser Lys Ile Val Glu Ser Glu Tyr Gly
 260 265 270
 Phe His Ile Ile Gln Leu Ile Glu Lys Arg Gly Asp Arg Ile Asn Thr
 275 280 285
 Arg His Ile Leu Leu Lys Pro Lys Val Ser Asp Lys Glu Leu Asp Glu
 290 295 300
 Ala Asn Ala Arg Leu Asp Ser Ile Ala Asn Asp Ile Arg Ser Asp Lys
 305 310 315 320
 Phe Thr Phe Asp Gln Ala Ala Ser Ala Leu Ser Gln Asp Lys Asp Thr
 325 330 335
 Arg Asn Ser His Gly Leu Met Gln Asn Pro Gln Asn Gln Thr Ala Lys
 340 345 350
 Phe Glu Met Gln Asp Leu Pro Gln Glu Ile Ala Lys Val Val Asp Lys
 355 360 365
 Met Asn Ile Gly Glu Ile Ser Lys Ala Phe Thr Met Val Asn Pro Lys
 370 375 380
 Asp Gly Lys Glu Val Cys Ala Ile Val Lys Leu Lys Ser Arg Ile Asn
 385 390 395 400
 Gly His Lys Ala Thr Ile Thr Asp Asp Tyr Gln Asn Leu Lys Glu Ile
 405 410 415
 Val Leu Asp Lys Arg Arg Glu Glu Ala Leu Gln Lys Trp Ile Val Glu
 420 425 430
 Lys Gln Lys His Thr Tyr Val Arg Ile Asn Pro Ala Trp Gln Arg Cys
 435 440 445
 Asp Phe Lys Tyr Pro Gly Trp Ile Lys Lys Asp
 450 455

<210> 8155

<211> 323

<212> PRT

<213> B.fragilis

<400> 8155

Asn Glu Val Val Phe Pro Ala Pro Phe Gly Pro Ser Lys Pro Thr Ile
 1 5 10 15
 Ser Pro Cys Phe Thr Leu Met Glu Thr Trp Leu Thr Thr Val Arg Leu
 20 25 30
 Pro Tyr Phe Phe Thr Lys Ser Ser Val Arg Ser Thr Ile Leu Ala
 35 40 45
 Phe Phe His Ile Leu Cys Tyr Phe Ala Ala Asn Val Ala Lys Ile Ser
 50 55 60
 Arg Lys Asn Val His Leu Gln Thr Asn Ile Arg Val Met Ile Lys Ala
 65 70 75 80
 Leu Arg Thr Val Gly Arg Tyr Ile Met Leu Met Gly Arg Thr Phe Ser
 85 90 95
 Arg Pro Glu Arg Met Arg Met Phe Phe Arg Gln Tyr Ile Lys Glu Ile
 100 105 110
 Glu Gln Leu Gly Val Asn Ser Ile Gly Ile Val Leu Leu Ile Ser Phe
 115 120 125
 Phe Ile Gly Ala Val Ile Thr Ile Gln Ile Lys Leu Asn Ile Glu Ser
 130 135 140
 Pro Trp Met Pro Arg Trp Thr Val Gly Tyr Val Thr Arg Glu Ile Leu
 145 150 155 160
 Leu Leu Glu Phe Ser Ser Ser Ile Met Cys Leu Ile Leu Ala Gly Lys
 165 170 175
 Val Gly Ser Asn Ile Ala Ser Glu Leu Gly Thr Met Arg Val Thr Gln
 180 185 190

Gln Ile Asp Ala Leu Glu Ile Met Gly Val Asn Ser Ala Asn Tyr Leu
 195 200 205
 Ile Leu Pro Lys Ile Thr Ala Met Val Thr Met Ile Pro Ile Leu Val
 210 215 220
 Thr Phe Ser Ile Phe Ala Gly Ile Ile Gly Ala Phe Ala Thr Cys Trp
 225 230 235 240
 Phe Gly Gly Ile Met Thr Ala Thr Asp Leu Glu Tyr Gly Leu Gln Tyr
 245 250 255
 Met Phe Val Glu Trp Phe Val Trp Cys Gly Ile Ile Lys Ser Leu Phe
 260 265 270
 Phe Ala Phe Ile Ile Ala Ser Val Ser Ser Phe Phe Gly Tyr Thr Val
 275 280 285
 Glu Gly Gly Ser Ile Glu Val Gly Lys Ala Ser Thr Asp Ser Val Val
 290 295 300
 Ser Ser Ser Val Leu Ile Leu Phe Ala Asp Leu Val Leu Thr Lys Leu
 305 310 315 320
 Leu Met Gly

<210> 8156
 <211> 634
 <212> PRT
 <213> B.fragilis

<400> 8156
 Thr Lys Thr Val Lys Ala Lys Ser Ile Met Ser Asp Ile Ile His Leu
 1 5 10 15
 Leu Pro Asp Ser Val Ala Asn Gln Ile Ala Ala Gly Glu Val Ile Gln
 20 25 30
 Arg Pro Ala Ser Val Ile Lys Glu Leu Val Glu Asn Ala Ile Asp Ala
 35 40 45
 Glu Ala Gln Asn Ile His Val Leu Val Thr Asp Ala Gly Lys Thr Cys
 50 55 60
 Ile Gln Val Ile Asp Asp Gly Lys Gly Met Ser Glu Thr Asp Ala Arg
 65 70 75 80
 Leu Ser Phe Glu Arg His Ala Thr Ser Lys Ile Arg Glu Ala Ser Asp
 85 90 95
 Leu Phe Ala Leu Arg Thr Met Gly Phe Arg Gly Glu Ala Leu Ala Ser
 100 105 110
 Ile Ala Ala Val Ala Gln Val Glu Leu Lys Thr Arg Pro Glu Ser Glu
 115 120 125
 Glu Leu Gly Thr Lys Ile Ile Ala Gly Ser Lys Val Glu Ser Gln
 130 135 140
 Glu Ala Val Ser Cys Pro Lys Gly Ser Asn Phe Ser Ile Lys Asn Leu
 145 150 155 160
 Phe Phe Asn Ile Pro Ala Arg Arg Lys Phe Leu Lys Ala Asn Ser Thr
 165 170 175
 Glu Leu Ser Asn Ile Leu Ala Glu Phe Glu Arg Ile Ala Leu Val His
 180 185 190
 Pro Glu Val Ala Phe Ser Leu Tyr Ser Asn Asp Ser Glu Leu Phe Asn
 195 200 205
 Leu Pro Ala Cys His Leu Arg Gln Arg Ile Leu Ser Val Phe Gly Lys
 210 215 220
 Lys Leu Asn Gln Gln Leu Leu Ser Val Glu Val Asn Thr Thr Met Val
 225 230 235 240
 Lys Val Ser Gly Tyr Val Ala Lys Pro Glu Thr Ala Arg Lys Lys Gly
 245 250 255
 Ala His Gln Tyr Phe Phe Val Asn Gly Arg Tyr Met Arg His Pro Tyr
 260 265 270

Phe His Lys Ala Val Met Asp Ala Tyr Glu Gln Leu Ile Pro Ala Gly
 275 280 285
 Glu Gln Ile Ser Tyr Phe Ile Tyr Phe Glu Val Asp Pro Ala Asn Ile
 290 295 300
 Asp Val Asn Ile His Pro Thr Lys Thr Glu Ile Lys Phe Glu Asn Glu
 305 310 315 320
 Gln Ala Ile Trp Gln Ile Leu Ser Ala Ser Ile Lys Glu Ser Leu Gly
 325 330 335
 Lys Phe Asn Ala Val Pro Ser Ile Asp Phe Asp Thr Glu Asp Met Pro
 340 345 350
 Asp Ile Pro Ala Phe Glu Gln Asn Leu Pro Pro Ala Pro Pro Lys Val
 355 360 365
 His Phe Asn Ser Asp Phe Asn Pro Phe Lys Pro Ser Ser Ser Ser Gly
 370 375 380
 Gly Gly Asn Tyr Ser Arg Pro Lys Val Asp Trp Glu Asp Leu Tyr Gly
 385 390 395 400
 Gly Leu Glu Lys Ala Ser Lys Met Asn Gln Pro Phe Ser Asp Ser Asp
 405 410 415
 Pro Glu Ser Glu Glu Phe Ala Val Ile Glu Glu Glu Ser Ile Ala Thr
 420 425 430
 Ala Ala Pro Glu Thr Leu Tyr Ala Gly Glu Pro Ala Val Ile Glu Lys
 435 440 445
 Gly Thr Gln His Leu Gln Phe Lys Gly Arg Phe Ile Leu Thr Ser Val
 450 455 460
 Lys Ser Gly Leu Met Leu Ile Asp Gln His Arg Ala His Ile Arg Val
 465 470 475 480
 Leu Phe Asp Arg Tyr Arg Ala Gln Ile Gln Gln Lys Gln Gly Phe Ser
 485 490 495
 Gln Gly Val Leu Phe Pro Glu Ile Leu Gln Leu Pro Ala Ser Glu Ala
 500 505 510
 Ala Val Leu Gln Ser Ile Met Asp Asp Leu Ser Ala Val Gly Phe Asp
 515 520 525
 Leu Ser Asp Leu Gly Gly Gly Ser Tyr Ala Ile Asn Gly Val Pro Ser
 530 535 540
 Gly Ile Asp Gly Leu Asn Pro Val Asp Leu Val Arg Ser Met Leu His
 545 550 555 560
 Thr Ala Met Glu Lys Gly Asn Asp Val Lys Glu Glu Ile Gln Asp Ile
 565 570 575
 Leu Ala Leu Thr Leu Ala Arg Ala Ala Ile Val Tyr Gly Gln Val
 580 585 590
 Leu Ser Asn Glu Glu Met Val Ser Leu Val Asp Asn Leu Phe Ala Cys
 595 600 605
 Pro Ser Pro Asn Tyr Thr Pro Asp Gly Arg Val Val Leu Thr Thr Ile
 610 615 620
 Lys Glu Glu Glu Ile Asp Lys Leu Phe Arg
 625 630

<210> 8157

<211> 236

<212> PRT

<213> B.fragilis

<400> 8157

Cys Phe Leu Phe Ile Phe Val Gln Ser Lys Lys Lys Gln Thr Ile Asn
 1 5 10 15
 Thr Asp Lys Gly Tyr Met Glu Ala Lys Ala Glu Ile Leu Leu Val Asp
 20 25 30
 Asp His Ala Leu Val Leu Glu Gly Met Arg Arg Met Leu Glu Ser Val
 35 40 45

Ser Asp Val Arg Val Ala Asp Ala Val Thr Ser Gly Ala Lys Ala Ala
 50 55 60
 Glu Leu Ile Gly Glu Arg Asp Tyr Asp Ile Tyr Val Leu Asp Val Asn
 65 70 75 80
 Leu Pro Asp Ile Ser Gly Phe Asp Leu Val Asp Met Ile Arg Glu Ile
 85 90 95
 Asn Glu Ser Ala Arg Ile Ile Ile Ser Thr Met His Glu Glu Ile Trp
 100 105 110
 Ile Ile Asn Arg Leu Ile Arg Gln Lys Val Asn Ala Val Ile Leu Lys
 115 120 125
 Ser Ser Glu Ala Val Glu Phe Glu Asn Ala Val Lys Ser Val Leu Glu
 130 135 140
 Gly Asn Pro Tyr Thr Cys Pro Arg Phe Gln Ser Ile Arg Gln Lys Leu
 145 150 155 160
 Ser Leu Ser Pro Val Gln Ile His Ser Lys Asp Ile Pro Thr Lys Arg
 165 170 175
 Glu Leu Asp Val Leu Lys Ala Val Ala Arg Gly Cys Asn Thr His Glu
 180 185 190
 Val Ala Ala Glu Leu Lys Ile Ser Glu Asn Thr Val Glu Thr Phe Arg
 195 200 205
 Lys Arg Leu Ile Gln Lys Phe Cys Ala Lys Asn Ala Ile Asp Met Val
 210 215 220
 Val Lys Ala Met Ser Lys Gly Trp Ile Glu Leu Glu
 225 230 235

<210> 8158
 <211> 410
 <212> PRT
 <213> B.fragilis

<400> 8158
 Tyr Leu Ile Phe Asn Ala Met Asn Tyr Tyr Leu Tyr Ile Glu Pro Tyr
 1 5 10 15
 Thr Leu Phe Phe Arg Lys Lys Gly Glu Cys Leu Phe Tyr Asn Thr Leu
 20 25 30
 Asn Lys Lys Val Leu Lys Ile Asp Val Ser Asn Asp Met Tyr Phe Ile
 35 40 45
 Leu Asp Lys Leu Glu Thr Asp Lys Tyr Thr Ile Leu Ser Asp Glu Asn
 50 55 60
 Leu Gln Thr Gln Thr Val Ser Phe Trp Val Asn Arg Leu Arg Glu Thr
 65 70 75 80
 Phe Asn Gly Asp Ile Leu Pro Phe Ser Asp Gly Ser Val Pro Pro Ala
 85 90 95
 Ile Phe Pro Pro Phe Ile Asn Asn Gln Arg Asp Phe Glu Arg Leu Asn
 100 105 110
 Thr Tyr Glu Trp Val Glu Lys Asp Asn Gln Val Met Asn Tyr Leu Glu
 115 120 125
 Glu Ile Tyr Leu Tyr Leu Asn Gly Cys Glu Glu Glu Asp Asp Ser Ile
 130 135 140
 Trp Lys Gln Ile Pro Ser Tyr Leu Cys Ser Asp Lys Glu Met Asp Ser
 145 150 155 160
 Arg Lys Leu Leu Gln Trp Leu Asp Gly Cys Ile Asp Lys Gln Ile Ser
 165 170 175
 Gln Val Tyr Leu Leu Gly Gly Asp Val Leu Met Tyr Lys Asp Leu Asn
 180 185 190
 Glu Ile Trp Gly Met Leu Glu Gln Lys Ser Met Ser Ile Gln Leu Tyr
 195 200 205
 Tyr Arg Tyr Asp Leu Phe Thr Glu Asn His Lys Lys Leu Leu Asn Ala
 210 215 220

Thr Ile Gly Gln Leu Thr Phe Val Val Pro Met Trp Lys Phe Asp Glu
 225 230 235 240
 Glu Leu Phe Ser Ser Leu Ser Arg Thr Val Glu Gly Ile Glu Gln Asn
 245 250 255
 Lys Arg Trp Leu Phe Leu Ile Thr Ser Asp Asn Glu Tyr Glu Leu Ala
 260 265 270
 Glu Gln Leu Val Ser Lys Tyr Ser Leu Glu Ser Arg Ser Ile Arg Pro
 275 280 285
 Val Tyr Lys Glu Asp Asn Leu Ser Phe Phe Lys Asp Ala Val Tyr Leu
 290 295 300
 Glu Glu Thr Asp Ile Cys Asn Thr Cys Leu Glu Lys Arg Asp Phe Tyr
 305 310 315 320
 Val Ser Gln Lys Ile Asn Lys Asn Asp Phe Gly Arg Leu Thr Val Leu
 325 330 335
 Pro Asp Asp Lys Ile Tyr Ala Asn Val Asn His Ala Glu Ile Gly Val
 340 345 350
 Met Glu Lys Asp Thr Ile Ala Ser Val Leu Tyr Lys Glu Met Thr Glu
 355 360 365
 Gly His Ser Trp Leu Arg Ile Arg Asp Gln Lys Pro Cys Cys Asp Cys
 370 375 380
 Ile Tyr Gln Trp Leu Cys Pro Ser Pro Ser Asn Tyr Glu Leu Ala Ile
 385 390 395 400
 Gly Lys Pro Asn Leu Cys His Val Lys Pro
 405 410

<210> 8159
 <211> 539
 <212> PRT
 <213> B.fragilis

<400> 8159
 Val Ser Ala Phe Leu Leu Ile Ile His Thr Leu Phe Ile Thr Tyr Asp
 1 5 10 15
 Lys Gln Tyr Phe Val Thr Leu Arg Thr Lys Tyr Leu Ile Ser Lys Ser
 20 25 30
 Met Ser Glu Ser Lys Arg Ile Lys Thr Ala Leu Val Ser Val Tyr His
 35 40 45
 Lys Glu Gly Leu Asp Glu Ile Ile Thr Lys Leu His Glu Glu Gly Val
 50 55 60
 Glu Phe Leu Ser Thr Gly Gly Thr Arg Gln Phe Ile Glu Ser Leu Gly
 65 70 75 80
 Tyr Pro Cys Lys Ala Val Glu Asp Leu Thr Ser Tyr Pro Ser Ile Leu
 85 90 95
 Gly Gly Arg Val Lys Thr Leu His Pro Lys Ile Phe Gly Gly Ile Leu
 100 105 110
 Cys Arg Arg Gly Leu Glu Gln Asp Ile Gln Gln Ile Glu Lys Tyr Glu
 115 120 125
 Ile Pro Glu Ile Asp Leu Val Ile Val Asp Leu Tyr Pro Phe Glu Ala
 130 135 140
 Thr Val Ala Ser Gly Ala Asp Glu Ala Ala Ile Ile Glu Lys Ile Asp
 145 150 155 160
 Ile Gly Gly Ile Ser Leu Ile Arg Ala Ala Lys Asn Phe Asn Asp
 165 170 175
 Val Ile Ile Val Ala Ser Gln Ala Gln Tyr Lys Pro Leu Leu Asp Met
 180 185 190
 Leu Met Glu His Gly Ala Thr Ser Ser Leu Glu Glu Arg Arg Trp Met
 195 200 205
 Ala Lys Glu Ala Phe Ala Val Ser Ser His Tyr Asp Ser Ala Ile Phe
 210 215 220

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Asn Tyr Phe Asp Ala Glu Glu Gly Ser Ala Phe Arg Cys Ser Ala Asn
225          230          235          240
Ser Gln Lys Thr Leu Arg Tyr Gly Glu Asn Pro His Gln Lys Gly Tyr
          245          250          255
Phe Tyr Gly Asn Leu Asp Glu Met Phe Asp Gln Ile His Gly Lys Glu
          260          265          270
Ile Ser Tyr Asn Asn Leu Leu Asp Ile Asn Ala Ala Val Asp Leu Ile
          275          280          285
Asp Glu Phe Asp Asp Val Thr Phe Ala Ile Leu Lys His Asn Asn Ala
290          295          300
Cys Gly Leu Ala Ser Arg Pro Thr Val Leu Glu Ala Trp Lys Asp Ala
305          310          315          320
Leu Ala Gly Asp Pro Val Ser Ala Phe Gly Gly Val Leu Ile Thr Asn
          325          330          335
Ala Val Ile Asp Lys Glu Thr Ala Glu Glu Ile Asn Lys Ile Phe Phe
          340          345          350
Glu Val Val Ile Ala Pro Asp Tyr Asp Val Asp Ala Leu Glu Ile Leu
          355          360          365
Gly Gln Lys Lys Asn Arg Ile Ile Leu Val Arg Lys Glu Ala Lys Leu
370          375          380
Pro Arg Lys Gln Phe Arg Ser Leu Leu Asn Gly Val Leu Val Gln Asp
385          390          395          400
Arg Asp Leu Asn Ile Glu Thr Thr Ala Asp Leu Lys Thr Val Thr Asp
          405          410          415
Lys Ala Pro Thr Pro Glu Glu Val Glu Asp Met Leu Phe Ala Asn Lys
          420          425          430
Ile Val Lys Asn Ser Lys Ser Asn Ala Ile Val Leu Ala Lys Gly Lys
          435          440          445
Gln Leu Leu Ala Ser Gly Val Gly Gln Thr Ser Arg Val Asp Ala Leu
          450          455          460
Lys Gln Ala Ile Glu Lys Ala Lys Leu Phe Gly Phe Asp Leu Gln Gly
465          470          475          480
Ala Val Met Ala Ser Asp Ala Phe Phe Pro Phe Pro Asp Cys Val Glu
          485          490          495
Ile Ala Asp Lys Glu Gly Val Thr Ala Val Ile Gln Pro Gly Gly Ser
          500          505          510
Val Lys Asp Gln Leu Thr Phe Asp Tyr Cys Asn Glu His Gly Met Ala
          515          520          525
Met Val Thr Thr Gly Ile Arg His Phe Lys His
          530          535

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<210> 8160

<211> 127

<212> PRT

<213> B.fragilis

<400> 8160

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Gln Thr Leu Thr Phe Met Asn Phe Lys Glu Ser Lys Ala Ile Tyr Leu
1          5          10          15
Gln Ile Ala Asp Arg Ile Cys Asp Glu Ile Leu Leu Gly Gln Tyr Gln
          20          25          30
Glu Glu Glu Arg Ile Pro Ser Val Arg Glu Tyr Ala Ala Met Val Glu
          35          40          45
Val Asn Ala Asn Thr Ala Met Arg Ser Phe Asp Tyr Leu Gln Ser Gln
          50          55          60
Asp Ile Ile Tyr Asn Lys Arg Gly Ile Gly Tyr Phe Val Ser Ser Gly
65          70          75          80
Ala Lys Glu Leu Ile Phe Ser Leu Arg Arg Glu Thr Phe Leu Lys Asp
          85          90          95

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Glu Leu Glu His Val Phe Arg Gln Leu Tyr Thr Leu Gly Val Ser Asp
 100 105 110
 Asp Glu Leu Leu Thr Met Tyr Arg Asn Phe Met Met Lys Gln Lys
 115 120 125

<210> 8161
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 8161
 Lys Arg Thr Thr Met Ser Ala Glu Val Gln Glu Ser Gly Lys Lys Lys
 1 5 10 15
 Gly Asn Ser Lys Gln Lys Lys Met Thr Val Arg Val Asp Phe Thr Pro
 20 25 30
 Met Val Asp Met Asn Met Leu Leu Ile Thr Phe Phe Met Leu Cys Thr
 35 40 45
 Ser Leu Ser Lys Pro Gln Thr Met Glu Ile Ser Met Pro Ser Asn Asp
 50 55 60
 Lys Asn Ile Thr Glu Glu Gln Gln Ser Lys Val Lys Ala Ser Gln Ala
 65 70 75 80
 Ile Thr Leu Leu Leu Gly Pro Asp Asp Lys Leu Tyr Tyr Tyr Glu Gly
 85 90 95
 Glu Pro Asn Tyr Lys Asp Tyr Thr Ser Leu Lys Glu Thr Thr Tyr Lys
 100 105 110
 Pro Asp Gly Leu Arg Gly Ile Leu Lys Lys Asn Ala Thr Ala Val
 115 120 125
 Arg Gln Val Asn Asp Leu Lys Gln Lys Lys Leu Glu Leu Lys Ile Ser
 130 135 140
 Glu Asp Glu Phe Thr Lys Gln Leu Ser Glu Ile Lys Ser Gly Lys Asn
 145 150 155 160
 Thr Pro Thr Val Ile Ile Lys Ala Met Asp Asn Ala Ser Tyr Lys Asn
 165 170 175
 Leu Ile Asp Ala Leu Asp Glu Met Gln Ile Cys Asn Ile Gly Lys Tyr
 180 185 190
 Val Ile Thr Asn Ile Ala Glu Ala Asp Glu Phe Leu Val Lys Asn Phe
 195 200 205
 Glu Ser Lys Gly Glu Leu Ser Gln Asn Ile Ala Asp
 210 215 220

<210> 8162
 <211> 473
 <212> PRT
 <213> B.fragilis

<400> 8162
 Phe Lys Ser Ala Asn Ile Arg Leu Tyr Leu Lys Thr Ser Tyr Leu Cys
 1 5 10 15
 Ser Ser Gln Lys Glu Ala Lys Ala Asn Ile Met Arg Ser Ile Leu Ile
 20 25 30
 Val Glu Asp Asp Ile Thr Phe Gly Met Met Leu Lys Thr Trp Leu Gly
 35 40 45
 Lys Lys Gly Phe Asn Val Ser Ser Val Ser Asn Ile Ala Arg Ala Gln
 50 55 60
 Lys His Ile Asp Ala Gln Pro Val Asp Leu Ile Leu Ser Asp Leu Arg
 65 70 75 80
 Leu Pro Asp His Asp Gly Ile His Leu Leu Lys Trp Met Gly Glu Lys
 85 90 95
 Glu Leu His Ile Pro Leu Ile Ile Met Thr Gly Tyr Ala Asp Ile Gln

100 105 110
 Ser Ala Val Gln Ala Met Lys Leu Gly Ala Gln Asp Tyr Ile Ala Lys
 115 120 125
 Pro Val Asn Pro Glu Glu Leu Leu Lys Lys Met Ser Glu Ala Leu Gln
 130 135 140
 Lys Lys Glu Ala Pro Leu Pro Lys Thr Pro Leu Thr Glu Lys Ser Pro
 145 150 155 160
 Lys Thr Lys Gln Glu Ser His Ser Tyr Leu Glu Gly Glu Ser Asp Ala
 165 170 175
 Ala Lys Gln Leu Tyr Asn Tyr Val Ser Leu Val Ala Pro Thr Asn Met
 180 185 190
 Ser Val Leu Ile Asn Gly Ala Ser Gly Thr Gly Lys Glu Tyr Val Ala
 195 200 205
 His Arg Ile His Gln Leu Ser Lys Arg Ser Asp Lys Pro Phe Ile Ala
 210 215 220
 Ile Asp Cys Gly Ser Ile Pro Lys Glu Leu Ala Ala Ser Glu Phe Phe
 225 230 235 240
 Gly His Ile Lys Gly Ser Phe Thr Gly Ala Leu Ser Asp Lys Thr Gly
 245 250 255
 Ala Phe Val Ala Ala Asn Gly Gly Thr Ile Phe Leu Asp Glu Ile Gly
 260 265 270
 Asn Leu Ser Tyr Glu Ile Gln Ile Gln Leu Leu Arg Ala Leu Gln Glu
 275 280 285
 Arg Lys Ile Arg Pro Val Gly Ser Asn Ser Glu Ile Thr Val Asp Ile
 290 295 300
 Arg Leu Val Ser Ala Thr Asn Glu Asn Leu Glu Gln Ala Ile Glu Lys
 305 310 315 320
 Gly Thr Phe Arg Glu Asp Leu Tyr His Arg Ile Asn Glu Phe Thr Leu
 325 330 335
 Arg Met Pro Thr Leu Lys Glu Arg Gly Gly Asp Ile Leu Leu Phe Ala
 340 345 350
 Asn Phe Phe Leu Asp Gln Ala Asn Lys Glu Leu Asp Lys Gln Leu Ile
 355 360 365
 Gly Phe Asp Ala Asn Ala Ser Lys Ala Leu Leu Glu Tyr His Trp Pro
 370 375 380
 Gly Asn Leu Arg Gln Met Lys Asn Ile Ile Lys Arg Ala Thr Leu Leu
 385 390 395 400
 Ala Gln Gly Ser Phe Ile Gly Leu Ala Glu Leu Gly Ser Glu Ile Leu
 405 410 415
 Glu Thr Gln Leu Ser Thr Pro Lys Met Thr Leu Arg Asp Glu Asp Ala
 420 425 430
 Glu Lys Glu His Ile Leu Glu Ala Leu Arg Gln Thr Gly Asn Asn Lys
 435 440 445
 Ser Arg Ala Ala Gln Leu Leu Asp Ile Asp Arg Lys Thr Leu Tyr Asn
 450 455 460
 Lys Leu Lys Leu Tyr Gly Ile Asp Leu
 465 470

<210> 8163

<211> 431

<212> PRT

<213> B.fragilis

<400> 8163

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr

[illegible]

<400> 8164
Ala Thr Gly Ala Gly Arg Leu Ser Tyr Ile Cys Tyr Ser Thr Phe Gly
1 5 10 15
Glu Tyr Phe Gly Ile Gly Leu Phe Lys Ile Asn Phe Thr Asn Lys Met

	20		25		30										
Arg	Ile	Leu	Arg	Asp	Leu	Gln	Asn	Val	Ile	Ala	Ser	Glu	Tyr	Tyr	Lys
	35						40					45			
Thr	Arg	His	Asp	Val	Ala	Ala	Lys	Leu	Phe	Leu	Phe	Phe	Pro	Val	Leu
	50					55					60				
Leu	Thr	Val	Ala	Phe	Ile	Val	Tyr	Asp	Leu	Trp	Asn	Leu	Ser	Gln	Glu
65					70					75					80
Gly	Tyr	Asp	Gly	Thr	Asn	Leu	Trp	Ile	Tyr	Asn	Ile	Gly	Arg	Thr	Leu
			85						90					95	
Phe	Met	Phe	Tyr	Gly	Met	Leu	Tyr	Pro	Leu	Met	Ala	Ala	Leu	Phe	Cys
			100					105						110	
Ala	Ala	Tyr	Ile	Gly	Lys	Glu	Phe	Lys	Asn	Asp	Asn	Tyr	Leu	Leu	Leu
		115						120					125		
Phe	Leu	Phe	Pro	Val	Pro	Arg	Gly	Thr	Val	Tyr	Val	Ala	Lys	Leu	Ile
	130					135					140				
Tyr	Leu	Leu	Ser	Met	Thr	Phe	Leu	Ser	Val	Leu	Ile	Ala	Tyr	Val	Ala
145					150					155					160
Phe	Met	Leu	Ser	Gly	Phe	Ile	Leu	Gly	Val	Cys	Leu	Pro	Ser	Met	Gly
				165					170					175	
Phe	Gln	Asn	Phe	Asp	Val	Arg	Ile	Leu	Val	Ile	Ser	Val	Phe	Phe	Arg
			180					185						190	
Val	Phe	Ile	Gly	Leu	Leu	Pro	Ile	Leu	Val	Ile	Gln	Tyr	Val	Phe	Ser
	195						200					205			
Phe	Leu	Phe	Lys	Asn	Tyr	Ala	Leu	Ala	Leu	Gly	Phe	Ser	Phe	Phe	Met
	210					215					220				
Thr	Val	Phe	Ser	Met	Ile	Ala	Ser	Asn	Trp	Arg	Tyr	Ile	Asn	Phe	Ile
225					230					235					240
Pro	Tyr	Ser	Ser	Ile	Leu	His	Ala	Tyr	Ser	Ser	Phe	Met	Gln	Gln	Thr
				245					250					255	
Val	Tyr	Tyr	Trp	Lys	Ser	Phe	Glu	Thr	Ile	Asn	Ile	Ser	Tyr	Phe	Ile
			260					265					270		
Val	Phe	Ser	Ile	Val	Gly	Tyr	Ile	Leu	Tyr	Arg	Tyr	Lys	Lys	Trp	Arg
	275						280					285			

<210> 8165

<211> 513

<212> PRT

<213> B.fragilis

<400> 8165

Pro	Lys	Ile	Tyr	Phe	Thr	Met	Ile	Gly	Tyr	Arg	Asn	Leu	Leu	Ile	Ser
1				5					10					15	
Leu	Phe	Cys	Ser	Met	Ala	Val	Ser	Ala	Ala	Gly	Gln	Pro	Arg	Leu	Val
			20					25				30			
Lys	Ser	Leu	Val	Pro	Asp	Met	Pro	Ser	Gln	Ala	Ser	Asp	Tyr	Phe	Cys
	35					40					45				
Thr	Trp	Asn	Leu	Gln	Gly	Tyr	Val	Ala	Ser	Tyr	Lys	Ser	Thr	Glu	Leu
	50				55						60				
Thr	Arg	Ala	Ala	Met	Thr	Glu	Asp	Tyr	Leu	Phe	Gly	Asp	Gly	Leu	Tyr
65					70					75					80
Gln	Asn	Trp	Val	Asp	Cys	Tyr	Pro	Ala	Ile	Arg	Lys	Asp	Leu	Tyr	Phe
				85					90					95	
Val	Met	Asp	Asp	Ser	Trp	Asp	Ile	Pro	Lys	Asp	Val	Asn	Asp	Ser	Pro
		100						105					110		
Asn	Pro	Tyr	Leu	Gly	Cys	Val	Glu	Leu	Ser	Ser	Asp	Arg	Phe	Pro	Ser
		115					120					125			
Phe	Arg	Gly	Asp	Ala	Val	Glu	Arg	Leu	Lys	Gln	Leu	Ser	Glu	Gln	Ile
	130					135					140				
Lys	Ser	Lys	Gly	Trp	Lys	Gly	Val	Gly	Gly	Trp	Ile	Cys	Ala	Gln	Lys

145 150 155 160
 Ala Glu Thr His Ala Ala Ile Pro Glu Glu Glu Tyr Trp Lys Gln Arg
 165 170 175
 Ile Lys Ala Ala Asn Ala Ala Gly Phe Asp Tyr Trp Lys Val Asp Trp
 180 185 190
 Gly Lys Glu Asp Arg Asn Gly Glu Trp Arg Arg Lys Leu Thr Ala Ile
 195 200 205
 Gly Lys Arg Tyr Ala Pro His Leu Tyr Ile Glu His Ala Leu Arg Asn
 210 215 220
 Glu Phe Ile Glu Phe Ser Asp Val Phe Arg Thr Tyr Asp Val Glu Asn
 225 230 235 240
 Ile Thr Ala Gln Pro Ile Thr Ile Arg Arg Ile Cys Asp Leu Leu Pro
 245 250 255
 Tyr Lys Thr Val Glu Gly Ala Lys Gly Ile Ile Asn Cys Glu Asp Glu
 260 265 270
 Pro Tyr Ile Ala Val Gly Leu Gly Cys Ala Ile Gly Val Met Arg His
 275 280 285
 Pro Phe Ala Gly Thr Leu Pro Asp Gly Ala Gln Asp Phe Val Phe Pro
 290 295 300
 Pro Val Gly Arg Asp Ile Lys Arg Arg Leu Asp Glu Val Val Arg Gly
 305 310 315 320
 Val Arg Trp His Arg Ile Ala Glu Pro Phe Ala Val Gly Tyr Gly Thr
 325 330 335
 Phe Ala Ile Asp Ser Val Lys Leu Thr Asp His Trp Ile Leu Gln Glu
 340 345 350
 Asn Glu Thr Trp Asn Lys Gly Arg Thr Val Gly Ala Asp Val Thr Ala
 355 360 365
 Asp Ala Pro Ala Arg Val Ala Arg Asn Met Lys Leu Pro Glu Val Ser
 370 375 380
 Gly Ala Pro Leu Ser Val Cys Pro Phe Val Leu Ala Ser Arg Tyr Pro
 385 390 395 400
 Asn Gly Ala Val Ala Val Ser Thr Ile Gly Arg Asn Val Gly Arg Glu
 405 410 415
 Tyr Val Thr Glu Lys Val Ala Val Ser Ile Ser Val Asp Arg Trp Asp
 420 425 430
 Ile Pro Ile Gly Leu Phe Gly Tyr Phe Lys Glu Val Thr Met Val Phe
 435 440 445
 Pro Ser Pro Leu Lys Thr Gly Lys His Thr Val Phe Ala Gln Asp Leu
 450 455 460
 Ala Gly Glu Asn Pro Val Asp Ile Thr Ser Asn Val Val Ile Lys Asp
 465 470 475 480
 Asn Arg Leu Ile Ile Pro Gly Glu Val Ile Ser Arg Val Gly Leu Met
 485 490 495
 Asn Ala Ser Glu Gly Asp Cys Ser Asp Pro Gly Met Val Ile Arg Val
 500 505 510
 Met

<210> 8166
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 8166
 Lys Arg Asn Phe Met Lys Arg Thr Thr Tyr Ile Phe Ile Gly Ile Leu
 1 5 10 15
 Val Ser Val Leu Val Ile Leu Met Ala Gly Val Val Tyr Ile Ser Phe
 20 25 30
 Gln Lys Ser Glu Thr Asn Ser Tyr Thr Leu Thr Leu Ser Glu Lys Ile

35 40 45
 Leu Arg Thr Glu Phe Ser Gly Ile Arg Ala Val Lys Val Tyr Ala Asn
 50 55 60
 Asp Thr Arg Arg Val Trp Leu Asp Glu Ala Cys Val Asn Val Val Ser
 65 70 75 80
 Ser Thr Asp Gly Lys Thr Arg Leu Leu Ser Pro Glu Ser Glu Tyr Leu
 85 90 95
 Lys Ile Ser Gln Asn Ala Asp Thr Leu Val Ile Cys Leu Asp Leu Thr
 100 105 110
 Thr Tyr Asp Leu Pro Lys Gln Lys Glu Tyr Leu Ile Pro Ala Leu
 115 120 125
 Gln Ala Lys Gly Leu Gln Leu Thr Ile Glu Ala Asp Ser Asn Leu Ala
 130 135 140
 Phe Val Ala Asn Ala Ile Arg Gly Leu Arg Thr Arg Ile Asp Arg Leu
 145 150 155 160
 His Ala Asp Ser Leu Thr Thr Tyr Ile Arg Gly Gly Glu Leu Arg Leu
 165 170 175
 Asp Ser Cys Glu Ile Arg Ala Phe Cys Val Asp Gly Asp Gly Val Thr
 180 185 190
 Phe Asn Ala His Gln Ser Ile Ile Pro His Leu Tyr Leu Asp Leu Asp
 195 200 205
 Gly Val Arg Asn Trp Gly Val His Glu Ser Val Ile Gly Thr Glu His
 210 215 220
 Leu Thr Gly Ser Gly Val Tyr His Asn Asn Leu Gln Arg Gly Glu Cys
 225 230 235 240
 Lys Lys Met Ile Trp Thr Pro Lys Lys Glu Asp Ala Glu Leu Arg Leu
 245 250 255
 Thr Ile Arg Glu Lys Gly Ser Leu Ile Leu Gln Glu Glu
 260 265

<210> 8167
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 8167
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 8168
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 8168
 Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30

Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Phe
 100

<210> 8169
 <211> 283
 <212> PRT
 <213> B.fragilis

<400> 8169
 Ile Leu Asn Asn Lys Phe Phe Asn Lys Lys Asn Phe Ile Met Glu Thr
 1 5 10 15
 Thr Gln Lys Lys Ser Thr Lys Ile Val Gly Ile Lys Asn Ala Gly Leu
 20 25 30
 Val Ile Ile Cys Cys Phe Ile Ile Ala Val Cys Ile Tyr His Phe Ile
 35 40 45
 Leu Gly Asn Pro Thr Asn Phe Met Asn Asn Asp Pro Asn Asn His Pro
 50 55 60
 Leu Pro Gly Asn Phe Met Gly Thr Ile Tyr Lys Gly Gly Val Ile Val
 65 70 75 80
 Pro Val Ile Gln Thr Leu Leu Leu Thr Val Leu Ala Leu Ser Ile Glu
 85 90 95
 Arg Tyr Phe Ala Leu Arg Ser Ala Phe Gly Arg Gly Ser Leu Val Lys
 100 105 110
 Phe Val Ser Asn Ile Lys Glu Ala Leu Ser Val Gly Asp Leu Arg Lys
 115 120 125
 Ala Gln Glu Ile Cys Asp Lys Gln Arg Gly Ser Val Ala Asn Val Val
 130 135 140
 Thr Ser Thr Leu Arg Lys Tyr Glu Glu Met Glu Asn Glu Ser Ser Leu
 145 150 155 160
 Ser Lys Asp Gln Lys Leu Leu Ala Ile Gln Lys Glu Leu Glu Glu Ala
 165 170 175
 Thr Ala Leu Glu Leu Pro Met Met Glu Gln Asn Leu Pro Ile Ile Gly
 180 185 190
 Thr Ile Thr Thr Leu Gly Thr Leu Met Gly Leu Leu Gly Thr Val Ile
 195 200 205
 Gly Met Ile Arg Ser Phe Ala Ala Leu Ala Ala Gly Gly Ser Ala Asp
 210 215 220
 Ser Met Ala Leu Ser Gln Gly Ile Ser Glu Ala Leu Ile Asn Thr Ala
 225 230 235 240
 Phe Gly Ile Leu Thr Gly Ala Leu Ala Val Ile Ser Tyr Asn Tyr Tyr
 245 250 255
 Thr Asn Lys Ile Asp Lys Leu Thr Tyr Ser Leu Asp Glu Val Gly Phe
 260 265 270
 Ser Ile Val Gln Thr Phe Ala Ala Thr His Lys
 275 280

<210> 8170
 <211> 65
 <212> PRT
 <213> B.fragilis

Leu	Ile	Asn	Asn	Arg	Asp	Leu	Asn	Arg	Met	Ile	Arg	Lys	Glu	Thr	Val
1				5					10					15	
His	Ile	Ile	Trp	Gly	Thr	Ile	Gln	Ala	Gly	Leu	Val	Met	Leu	Leu	Leu
			20					25					30		
Gly	Ala	Cys	Ser	Thr	Thr	Lys	His	Leu	Pro	Glu	Gly	Glu	Ile	Leu	Tyr
		35					40					45			
Thr	Gly	Ser	Lys	Thr	Ile	Val	Glu	Asn	Glu	Pro	Gln	Ala	Pro	Leu	Thr
	50					55					60				
Glu	Asp	Ala	Leu	Thr	Glu	Leu	Asp	Ala	Ala	Leu	Asp	Lys	Ala	Pro	Ser
65					70					75					80
Thr	Lys	Ile	Leu	Gly	Phe	Val	Pro	Ile	Pro	Phe	Lys	Met	Trp	Ala	Tyr
				85					90					95	
Asn	Ser	Leu	Val	Arg	Tyr	Lys	Lys	Gly	Phe	Gly	His	Trp	Leu	Phe	Asn
			100					105					110		
Arg	Phe	Ala	Ala	Asn	Pro	Pro	Val	Phe	Ile	Ser	Thr	Val	Asn	Pro	Glu
		115					120					125			
Ile	Arg	Ala	Lys	Val	Gly	Thr	Asn	Leu	Leu	His	Asp	Tyr	Gly	Tyr	Phe
	130					135					140				
Asn	Gly	Thr	Val	Arg	Phe	Gln	Thr	Val	Pro	Asp	Lys	Lys	Asp	Ser	Leu
145					150					155					160
Lys	Ala	Ser	Ile	Arg	Tyr	Thr	Val	Asp	Met	Lys	Asp	Pro	Tyr	Tyr	Ile
				165					170					175	
Asp	Thr	Val	Tyr	Tyr	Thr	Arg	Phe	Asn	Pro	Arg	Thr	Leu	Arg	Ile	Met
			180					185					190		
Glu	Arg	Gly	Arg	Arg	Gly	Ser	Leu	Leu	Thr	Pro	Gly	Glu	Gln	Phe	Asn
		195					200					205			

Val	Ser	Asp	Leu	Asp	Ala	Glu	Arg	Ser	Arg	Ile	Ser	Thr	Leu	Leu	Arg
210						215					220				
Asn	Arg	Gly	Tyr	Phe	Tyr	Phe	Arg	Pro	Asp	Tyr	Met	Lys	Tyr	Gln	Ala
225						230					235				240
Asp	Thr	Leu	Leu	Asn	Pro	Gly	His	Val	Ser	Leu	Arg	Leu	Ile	Pro	Val
				245					250					255	
Pro	Gly	Leu	Pro	Asp	Ala	Ala	Gln	Arg	Pro	Tyr	Tyr	Val	Gly	Lys	Thr
			260					265					270		
Ser	Val	Phe	Leu	Tyr	Gly	Lys	Gly	Glu	Val	Pro	Asn	Ser	Thr	Leu	
		275					280				285				
Glu	Tyr	Arg	Gly	Leu	Asp	Ile	His	Tyr	Tyr	Lys	Lys	Met	Gln	Val	Arg
	290					295					300				
Pro	Asn	Met	Leu	Tyr	Arg	Trp	Leu	Asn	Tyr	Gln	Ala	Tyr	Val	Arg	Asn
305					310					315					320
Asp	Ser	Leu	Arg	Asn	Ser	Ala	His	Ser	Arg	Leu	Tyr	Ser	Gln	Tyr	Arg
				325					330					335	
Gln	Thr	Arg	Ile	Gln	Glu	Arg	Leu	Ser	Gln	Leu	Ser	Ile	Phe	Arg	Tyr
			340					345					350		
Leu	Asp	Leu	Gln	Tyr	Ile	Pro	Gln	Asp	Ser	Thr	Ala	Thr	Cys	Asp	Thr
		355					360					365			
Leu	Asn	Val	Arg	Leu	Gln	Ala	Thr	Phe	Asp	Lys	Pro	Tyr	Asp	Ala	Glu
	370					375					380				
Leu	Glu	Phe	Asn	Leu	Thr	Lys	Ser	Asn	Asn	Gln	Thr	Gly	Pro	Gly	
385					390					395				400	
Ala	Ser	Phe	Gly	Leu	Thr	Arg	Tyr	Asn	Val	Phe	Gly	Gly	Gly	Glu	Thr
				405					410					415	
Trp	Asn	Val	Lys	Leu	Lys	Gly	Ser	Tyr	Glu	Trp	Gln	Thr	Gly	Gln	Asn
			420					425					430		
Lys	Gly	Ser	Ser	Leu	Met	Asn	Ser	Trp	Glu	Met	Gly	Val	Ser	Thr	Ala
		435					440					445			
Leu	Thr	Phe	Pro	Arg	Val	Val	Phe	Pro	Ser	Phe	Gly	Gly	Arg	Glu	Tyr
	450					455					460				
Asp	Phe	Pro	Ala	Thr	Thr	Thr	Phe	Arg	Leu	Tyr	Ile	Asp	Gln	Leu	Asn
465					470					475					480
Arg	Ala	Lys	Tyr	Tyr	Lys	Leu	Leu	Ala	Phe	Gly	Gly	Asn	Ala	Thr	Tyr
				485					490					495	
Asp	Phe	Gln	Pro	Thr	Arg	Ile	Ser	Arg	His	Ser	Leu	Thr	Pro	Leu	Arg
			500					505					510		
Val	Thr	Phe	Asn	Val	Leu	Gln	His	Thr	Thr	Lys	Ala	Phe	Glu	Glu	Ile
		515					520						525		
Ala	Asp	Gln	Asn	Lys	Ala	Leu	Tyr	Arg	Ser	Leu	Gln	Asn	Gln	Phe	Ile
	530					535					540				
Pro	Ala	Met	Glu	Tyr	Thr	Tyr	Thr	Phe	Asp	Asn	Ala	Ala	Leu	Arg	Gly
545					550					555					560
Val	Arg	Asn	Pro	Ile	Trp	Trp	Gln	Thr	Thr	Phe	Thr	Ser	Ala	Gly	Asn
				565					570					575	
Ile	Thr	Ser	Gly	Ile	Tyr	Arg	Ile	Phe	Gly	Lys	Lys	Phe	Ser	Gln	Arg
			580					585					590		
Asp	Lys	Lys	Leu	Phe	Gly	Val	Pro	Phe	Ala	Gln	Phe	Leu	Lys	Val	Asn
	595						600					605			
Ser	Asp	Phe	Arg	Tyr	Thr	Trp	Lys	Ile	Asp	Lys	Asn	Gln	Ser	Ile	Ala
	610					615					620				
Ser	Arg	Val	Ala	Gly	Gly	Ile	Ile	Trp	Ala	Tyr	Gly	Asn	Thr	Asn	Thr
625					630					635					640
Ala	Pro	Tyr	Ser	Glu	Gln	Phe	Tyr	Ile	Gly	Gly	Ala	Asn	Ser	Val	Arg
				645					650					655	
Ala	Phe	Thr	Ala	Arg	Ser	Ile	Gly	Pro	Gly	Gly	Phe	Arg	Pro	Thr	Lys
		660					665					670			
Thr	Ser	Lys	Gly	Leu	Tyr	Leu	Asp	Gln	Thr	Gly	Asp	Ile	Arg	Met	Glu

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675	680	685
Ala Asn Val Glu Tyr Arg Phe Arg Ile Tyr Gly Asp Leu His Gly Ala		
690	695	700
Val Phe Leu Asp Ala Gly Asn Val Trp Met Leu Arg Lys Asp Glu Glu		
705	710	715
Ala Pro Glu Lys Gln Leu Arg Trp Lys Thr Phe Gly Lys Gln Ile Ala		
	725	730
		735
Leu Gly Thr Gly Ala Gly Ile Arg Tyr Asp Leu Asp Phe Leu Ile Leu		
	740	745
		750
Arg Leu Asp Cys Gly Val Pro Leu His Asp Pro Tyr Asp Thr Gly Lys		
	755	760
		765
Lys Gly Tyr Tyr Asn Val Thr Gly Ser Phe Trp Lys Gly Leu Gly Leu		
	770	775
		780
His Phe Ala Val Gly Tyr Pro Phe		
785	790	

<210> 8173

<211> 283

<212> PRT

<213> B.fragilis

<400> 8173

Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Leu Asn Ile Val Gly		
1	5	10
		15
Asn Tyr Ile Leu Ile Asn Gly Lys Leu Gly Phe Pro Glu Leu Gly Leu		
	20	25
		30
Leu Gly Ala Gly Ile Ser Thr Leu Phe Ser Arg Ile Val Met Val Leu		
	35	40
		45
Val Phe Ala Phe Val Phe Phe Ser Ser Arg Arg Phe Leu Arg Tyr Lys		
	50	55
		60
Leu Gly Phe Ile Arg Leu Gly Trp Ser Arg Thr Leu Phe Arg Gln Leu		
	65	70
		75
Asn Ala Leu Gly Trp Pro Val Ala Phe Gln Met Gly Met Glu Thr Ala		
	85	90
		95
Ser Phe Ser Leu Ser Thr Val Met Val Gly Trp Leu Gly Thr Ile Ala		
	100	105
		110
Leu Ala Ser His Gln Val Met Leu Thr Ile Ser Gln Phe Thr Phe Met		
	115	120
		125
Met Phe Tyr Gly Met Gly Ala Ala Val Ala Val Arg Val Ser Asn Phe		
	130	135
		140
Lys Gly Gln Asn Asp Ile Val Asn Val Arg Arg Thr Ala Tyr Ala Gly		
	145	150
		155
Ala His Ile Ile Leu Ala Met Gly Val Val Leu Leu Ser Ile Val Phe		
	165	170
		175
Leu Phe Arg Tyr Gln Val Gly Gly Trp Phe Thr Asp Asn Thr Glu Val		
	180	185
		190
Ser Ala Met Val Val Val Leu Met Val Pro Phe Leu Ala Tyr Gln Phe		
	195	200
		205
Gly Asp Gly Met Gln Ile Asn Phe Ala Asn Ala Leu Arg Gly Ile Ser		
	210	215
		220
Asp Val Lys Pro Met Met Leu Ile Ala Phe Ile Ala Tyr Phe Ile Ile		
	225	230
		235
Ser Leu Pro Ala Gly Tyr Phe Phe Gly Phe Val Met Gly Trp Gly Leu		
	245	250
		255
Leu Gly Val Trp Met Ala Phe Pro Phe Gly Leu Ser Ser Ala Ala Ile		
	260	265
		270
Met Leu Trp Leu Arg Phe Arg Tyr Lys Thr Arg		
	275	280

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<210> 8174
 <211> 347
 <212> PRT
 <213> B.fragilis

<400> 8174

Arg	Ile	Arg	Asn	Leu	Phe	Ile	Met	Gly	Leu	Phe	Ser	Phe	Thr	Gln	Glu
1			5						10					15	
Ile	Ala	Met	Asp	Leu	Gly	Thr	Ala	Asn	Thr	Ile	Ile	Ile	Thr	Gly	Gly
		20						25					30		
Lys	Ile	Val	Val	Asp	Glu	Pro	Ser	Val	Val	Ala	Leu	Asp	Arg	Arg	Thr
		35					40					45			
Asp	Lys	Met	Ile	Ala	Val	Gly	Glu	Lys	Ala	Lys	Leu	Met	His	Glu	Lys
	50					55					60				
Thr	His	Glu	Asn	Ile	Arg	Thr	Ile	Arg	Pro	Leu	Arg	Asp	Gly	Val	Ile
65					70					75				80	
Ala	Asp	Phe	Tyr	Ala	Cys	Glu	Gln	Met	Met	Arg	Gly	Leu	Ile	Lys	Gln
				85					90					95	
Val	Asn	Thr	Arg	Asn	Arg	Leu	Phe	Ser	Pro	Ser	Leu	Arg	Met	Val	Ile
			100					105					110		
Gly	Val	Pro	Ser	Gly	Ser	Thr	Glu	Val	Glu	Leu	Arg	Ala	Val	Arg	Asp
		115					120					125			
Ser	Ala	Glu	His	Ala	Gly	Gly	Arg	Asp	Val	Tyr	Leu	Val	Phe	Glu	Pro
	130					135					140				
Met	Ala	Ala	Ala	Ile	Gly	Ile	Gly	Ile	Asp	Val	Glu	Ala	Pro	Glu	Gly
145					150					155				160	
Asn	Met	Ile	Val	Asp	Ile	Gly	Gly	Gly	Ser	Thr	Glu	Ile	Ala	Val	Ile
				165					170					175	
Ser	Leu	Gly	Gly	Ile	Val	Ser	Asn	Asn	Ser	Ile	Arg	Ile	Ala	Gly	Asp
			180				185						190		
Asp	Leu	Thr	Ala	Asp	Ile	Gln	Glu	Tyr	Met	Ser	Arg	Gln	His	Asn	Val
		195					200					205			
Lys	Val	Ser	Glu	Arg	Met	Ala	Glu	Arg	Ile	Lys	Ile	Asn	Val	Gly	Ala
	210					215					220				
Ala	Leu	Thr	Glu	Leu	Gly	Glu	Asp	Ala	Pro	Glu	Asp	Tyr	Ile	Val	His
225					230					235				240	
Gly	Pro	Asn	Arg	Ile	Thr	Ala	Leu	Pro	Met	Glu	Val	Pro	Val	Cys	Tyr
			245						250					255	
Gln	Glu	Val	Ala	His	Cys	Leu	Glu	Lys	Ser	Ile	Ser	Lys	Ile	Glu	Thr
			260					265					270		
Ala	Ile	Leu	Ser	Ala	Leu	Glu	Asn	Thr	Pro	Pro	Glu	Leu	Tyr	Ala	Asp
		275					280					285			
Ile	Val	His	Asn	Gly	Ile	Tyr	Leu	Ala	Gly	Gly	Gly	Ala	Leu	Leu	Arg
	290					295					300				
Gly	Leu	Asp	Lys	Arg	Leu	Thr	Asp	Lys	Ile	Asn	Ile	Pro	Phe	His	Ile
305					310					315				320	
Ala	Glu	Asp	Pro	Leu	His	Ala	Val	Ala	Lys	Gly	Thr	Gly	Val	Ala	Leu
			325						330					335	
Lys	Asn	Val	Asp	Arg	Phe	Ser	Phe	Leu	Met	Arg					
			340					345							

<210> 8175
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 8175

Val	Ile	Arg	Lys	Thr	Ile	Lys	Lys	Thr	Thr	Val	Asn	Thr	Asn	Gln	Arg
1				5					10					15	

Glu Lys Tyr Phe Ser Asn Asp Val Ala Gly Val Ile Arg Thr Glu Ser
 20 25 30
 Arg Pro Val Phe Asp Phe Ile Leu Ser Ile Val Asn Glu Ala Leu Lys
 35 40 45
 Gln Pro Asn Thr Gln Ser Pro His Ile Lys Ile Thr Arg Leu Asn Ser
 50 55 60
 Gln Val Leu Ser Val Ser
 65 70

<210> 8176
 <211> 798
 <212> PRT
 <213> B.fragilis

<400> 8176

Leu Tyr Met Lys Lys Leu Leu Cys Leu Ile Ile Leu Leu Phe Ser Phe
 1 5 10 15
 Ile Arg Ser Glu Ala Gln Ser Asp His Ile Cys Pro His Glu Lys Leu
 20 25 30
 Tyr Val His Thr Asp Arg Ala Asn Tyr Glu Arg Gly Asp Thr Val Arg
 35 40 45
 Phe Arg Ala Tyr Leu Met Asp Thr Arg His Glu Ala Thr Ala Tyr Ser
 50 55 60
 Arg Tyr Val Tyr Ala Glu Leu Leu Ala Asp Ser Gln Val Ile Ser Arg
 65 70 75 80
 Glu Met Val Lys Asp Asp His Gly Val Phe Ser Gly Tyr Leu Ser Leu
 85 90 95
 Gly Asp Thr Leu Arg Ser Gly Asn Tyr Thr Leu Arg Phe Tyr Thr Arg
 100 105 110
 Tyr Leu Ser Ser Leu Pro Ala Pro Arg Tyr Phe Tyr Arg Gln Ile Ile
 115 120 125
 Val Gly Gly Arg Pro Phe Gln Asp Tyr Arg Lys Glu Ser Val Thr Arg
 130 135 140
 Met Ala Ala Ser Tyr His Val Ser Phe Phe Pro Glu Gly Gly Arg Leu
 145 150 155 160
 Pro Ser Gly Cys Val Ser Arg Val Ala Phe Lys Ala Leu Ser Pro Asp
 165 170 175
 Gly Leu Gly Thr Asp Val Gln Gly Phe Val Val Asn Gln Arg Gly Asp
 180 185 190
 Thr Val Thr Thr Leu Arg Ser Val His Arg Gly Met Gly Phe Phe Asn
 195 200 205
 Leu Glu Pro Val Ser Gly Asp Ser Tyr Thr Ala Val Cys Arg Asn Arg
 210 215 220
 Glu Gly Met Glu Leu Arg Phe Pro Leu Pro Pro Ala Asp Pro Ser Ala
 225 230 235 240
 Val Ser Leu Arg Val Asp Val Arg Lys Asp Asp Phe Leu Val Arg Leu
 245 250 255
 Asn Ser Gly Val Ser Pro Ser Pro Gly His Ser Leu Arg Val Glu Tyr
 260 265 270
 Arg Asp Ser Ile Leu Leu His Ala Ala Phe Ser Gly Ser Arg Pro Leu
 275 280 285
 Arg Leu Pro Arg Ser Pro Leu Pro Pro Gly Val Leu Arg Phe Val Leu
 290 295 300
 Leu Asp Gly Ser Gly Val Pro Ile Ser Gly Arg Thr Ala Phe Asn Gln
 305 310 315 320
 Ser Ser Ser Val Cys Ala Asp Val Asp Phe Ser Ala Arg Leu Lys Glu
 325 330 335
 Glu Lys Gly Arg Ser Phe Trp Asp Val Ser Leu Gly Leu Arg Asp Ser
 340 345 350

Ser Gly Glu Pro Leu Gly Gly Thr Leu Ser Val Ser Val Thr Asp Asp
 355 360 365
 Arg Tyr Ala Leu Gln Asp Thr Thr Val Asn Ile Leu Ser Ser Phe Leu
 370 375 380
 Leu Ser Ser Asp Leu Gln Gly Tyr Val Glu Ala Pro Ser Phe Tyr Phe
 385 390 395 400
 Ser Gly Asp Asp Ser Arg Thr Ser Tyr Leu Leu Asp Leu Leu Met Leu
 405 410 415
 Thr Gln Gly Trp Val Lys Tyr Ser Phe Val Pro Asp Tyr Gly Ser Phe
 420 425 430
 Pro Val Glu Arg Ser Gln Cys Val Ser Gly Lys Val Val Ser Glu Tyr
 435 440 445
 Ser Glu Lys Lys Cys Ile Ala Asp Ala Val Val Thr Leu Phe Ser Phe
 450 455 460
 Asp Lys Lys Ile Met Arg Gln Thr Thr Ser Asp Ala Ser Gly Cys Phe
 465 470 475 480
 Arg Phe Asp Ser Leu Ser Phe Pro Arg Gly Thr His Phe Ile Leu Gln
 485 490 495
 Ala Arg Lys Lys Lys Gly Gly Thr Asp Val Ala Leu Leu Val Asp Arg
 500 505 510
 Asp Ser Val Pro Ser Val His Ser Ser Leu Pro Val Tyr Ala Asp Trp
 515 520 525
 Phe Arg Ala Glu Met Asp Glu Pro Val Val Ser Glu Gln Ser Gly Asn
 530 535 540
 Asp Pro Ser Pro Thr Ser Ala Asn Val Phe Gln Arg Ser Ser Thr Val
 545 550 555 560
 Pro Phe Ser Met Glu Gln Tyr Leu Asp Glu Val Val Val Ser Thr Lys
 565 570 575
 Lys Ile Glu Lys Lys Lys Arg Tyr Ala Ile Glu Ser Leu Met Ala His
 580 585 590
 Ser Asp Trp Asn Lys Thr Tyr His Val Asp Glu Met Thr Leu Ser Pro
 595 600 605
 Tyr Ser Ser Thr Lys Asp Leu Leu Ile Asn Thr Pro Gly Val Gly Trp
 610 615 620
 Ala Val Asp Ser Asn Ser Gly Asp Phe Phe Tyr Ile Thr Arg Leu Arg
 625 630 635 640
 Ala Gly Gly Ser Ser Thr Pro Pro Pro Ala Leu Leu Met Val Asp Gly
 645 650 655
 Leu Glu Thr Ser Tyr Ser Glu Leu Val Gly Ile Pro Val Ser Ile Val
 660 665 670
 Glu Ser Ile Glu Leu Val Lys Asp Ala Ala Gln Met Ala Tyr Ile Gly
 675 680 685
 Ser Lys Ala Ser Asn Gly Ala Ile Leu Ile Ser Thr Lys Ser Gly Leu
 690 695 700
 Gly Thr Val Gly Lys Lys Ala Ser Asn Phe Arg Ile Ile Arg Pro Ile
 705 710 715 720
 Gly Tyr Gln Val Lys Arg Glu Ser Tyr Ser Pro Ser Tyr Pro Val Val
 725 730 735
 Tyr Gly Ala Ile Asn Asn Gly Gly Asn Ser Phe Arg Thr Ile Tyr Trp
 740 745 750
 Ser Pro Asp Leu Leu Leu Asp Lys Ala Ala Ser His Leu Glu Phe Gly
 755 760 765
 Asn Pro Lys Gln Gly Arg Leu Thr Leu Val Val Gln Gly Ile Thr Pro
 770 775 780
 Asp Gly Lys Leu Ile Asn Leu Thr Arg Thr Leu Gly Asn Glu
 785 790 795

<210> 8177

<211> 479

<212> PRT
 <213> B.fragilis

<400> 8177

Ile	Thr	Met	Lys	Arg	Phe	Gln	Leu	Phe	Leu	Val	Gly	Ala	Phe	Val	Ala
1			5					10					15		
Ala	Gly	Pro	Leu	Phe	Ala	Gln	Ser	Ala	Asp	Ala	Asp	Trp	His	Ser	Glu
		20					25						30		
Val	Ala	Lys	Val	Lys	Glu	Leu	Ile	Gln	Thr	Asn	Pro	Ala	Gln	Ala	Ser
		35				40					45				
Glu	Glu	Ala	Ala	Gln	Leu	Leu	Lys	Gly	Lys	Asn	Lys	Lys	Asn	Thr	Asp
	50				55					60					
Leu	Leu	Ile	Ala	Ile	Gly	Gln	Ala	Tyr	Leu	Glu	Ala	Gly	Lys	Ile	Asn
65				70					75					80	
Glu	Ala	Glu	Ala	Tyr	Ala	Ala	Leu	Gly	Gln	Lys	Ala	Asn	Ser	Lys	Ser
			85					90					95		
Ala	Ala	Val	Ser	Val	Leu	Gln	Gly	Asp	Ile	Ala	Val	Ala	Lys	Lys	Asp
			100					105					110		
Ala	Gly	Lys	Ala	Cys	Gln	Leu	Tyr	Glu	Gln	Ala	Ile	Tyr	Phe	Asp	Pro
		115					120					125			
Asn	Tyr	Lys	Glu	Ala	Tyr	Leu	Lys	Phe	Ala	Asp	Val	Tyr	Lys	Gly	Ala
	130					135					140				
Ser	Pro	Gln	Leu	Ala	Ile	Glu	Lys	Leu	Glu	Gln	Leu	Lys	Asn	Leu	Asp
145					150					155				160	
Pro	Ser	Cys	Val	Ala	Ala	Asp	Lys	Lys	Leu	Ala	Glu	Val	Tyr	Tyr	Leu
			165						170					175	
Asn	Asn	Lys	Phe	Asp	Lys	Ala	Ala	Glu	Ala	Tyr	Ala	His	Phe	Ile	Asn
			180					185					190		
Thr	Pro	Glu	Ala	Thr	Glu	Asp	Asp	Leu	Thr	Lys	Tyr	Ser	Phe	Ala	Leu
		195					200						205		
Phe	Leu	Asn	His	Asp	Phe	Glu	Lys	Ser	Leu	Gln	Ile	Ala	Leu	Met	Gly
	210					215					220				
Leu	Gln	Lys	Asn	Pro	Arg	Asp	Ala	Ala	Phe	Asn	Arg	Leu	Ala	Met	Tyr
225					230					235				240	
Asn	Tyr	Thr	Asp	Leu	Lys	Arg	Tyr	Asp	Glu	Ala	Met	Lys	Ala	Ala	Asp
			245						250					255	
Ala	Phe	Phe	Lys	Glu	Ser	Asp	Lys	Ala	Asp	Phe	Ser	Tyr	Leu	Asp	Tyr
			260					265					270		
Met	Tyr	Phe	Gly	His	Leu	Leu	Asn	Ala	Val	Lys	Lys	Tyr	Asp	Gln	Ala
	275						280						285		
Val	Glu	Ala	Tyr	Met	Lys	Ala	Ile	Thr	Leu	Asp	Pro	Ala	Lys	Thr	Asp
	290					295					300				
Leu	Trp	Arg	Glu	Val	Ser	Ser	Ser	Tyr	Glu	Leu	Asn	Asn	Glu	Phe	Thr
305					310					315				320	
Lys	Ala	Ile	Glu	Ala	Tyr	Lys	Lys	Tyr	Ser	Glu	Ser	Leu	Ser	Ala	Asp
			325						330					335	
Lys	Arg	Thr	Pro	Asp	Val	Gln	Phe	Gln	Ile	Gly	Lys	Leu	Tyr	Tyr	Glu
			340					345					350		
Lys	Gly	Thr	Gln	Ser	Asp	Thr	Leu	Thr	Val	Ser	Leu	Asp	Glu	Arg	Lys
		355					360					365			
Ala	Ala	Leu	Val	Ser	Ala	Asp	Ser	Ile	Phe	Thr	Glu	Ile	Ala	Lys	Val
	370					375						380			
Ala	Pro	Asp	Ser	Tyr	Leu	Gly	Asn	Phe	Trp	Arg	Ala	Arg	Thr	Asn	Ser
385					390					395				400	
Ala	Leu	Asp	Pro	Glu	Thr	Thr	Gln	Gly	Leu	Ala	Lys	Pro	Tyr	Tyr	Glu
			405						410					415	
Glu	Val	Ala	Ala	Phe	Leu	Ile	Asp	Lys	Asn	Asp	Pro	Arg	Tyr	Asn	Ser
			420					425					430		
Ala	Leu	Ile	Glu	Cys	Tyr	Ser	Tyr	Leu	Gly	Tyr	Tyr	Tyr	Leu	Val	Ala

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430

435 440 445
 Asn Lys Leu Pro Glu Ser Lys Glu Tyr Trp Asn Lys Ile Leu Ala Ile
 450 455 460
 Asp Pro Ala Asn Ala Thr Ala Lys Arg Ala Leu Asp Gly Ile Lys
 465 470 475

<210> 8178
 <211> 187
 <212> PRT
 <213> B.fragilis

<400> 8178
 Gly Ala Cys Asp Cys Lys Asn Trp Ser Glu Arg Ala Lys Arg Val Gly
 1 5 10 15
 Thr Lys Glu Phe Gly Ala Met Ile Ile Asn Tyr Ile His Arg Val Gly
 20 25 30
 Trp Phe Val Gly Leu Ile Leu Leu Gln Val Leu Ile Leu Asn Asn Val
 35 40 45
 His Ile Ala Gly Val Ala Thr Pro Phe Leu Tyr Val Tyr Phe Ile Leu
 50 55 60
 Lys Phe Asn Ser Gly Thr Ser Arg Asn Glu Leu Met Val Trp Gly Phe
 65 70 75 80
 Cys Met Gly Leu Ala Ile Asp Ile Phe Ser Asn Thr Pro Gly Met Asn
 85 90 95
 Ala Ala Ala Thr Val Leu Leu Ala Phe Leu Arg Pro Leu Phe Leu Arg
 100 105 110
 Leu Phe Thr Pro Arg Asp Thr Leu Asp Ser Ile Val Pro Ser Leu Lys
 115 120 125
 Ser Met Gly Ile Ala Ser Phe Leu Lys Tyr Leu Val Val Ser Val Phe
 130 135 140
 Val His His Phe Met Leu Leu Thr Leu Glu Phe Phe Ser Phe Thr Ser
 145 150 155 160
 Ile Pro Leu Leu Leu Leu Arg Val Val Ser Ser Thr Ile Leu Thr Ile
 165 170 175
 Thr Cys Ile Met Ala Val Glu Gly Val Arg Arg
 180 185

<210> 8179
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 8179
 Arg Val Ser Phe Ile Val Val Ala Met Phe Met Phe Val Cys Asp Gly
 1 5 10 15
 Phe Asn Leu Asp Leu Asn Met Lys Leu Lys Thr Asp Asn Gln Asn Phe
 20 25 30
 Asn Lys Lys Ile Ile Met Lys Lys Leu Val Leu Val Val Ala Met Phe
 35 40 45
 Met Phe Ala Cys Gly Ser Phe Phe Thr Met Ala Gln Asp Pro Val Lys
 50 55 60
 Lys Asp Pro Lys Lys Glu Val Lys Asp Thr Ala Lys Thr Glu Pro Lys
 65 70 75 80
 Lys Glu Val Ala Asp Thr Thr Ala Ile Thr Val Ala Ala Ser Gly Ala
 85 90 95
 Phe Ala Gln Phe Ala Glu
 100

<210> 8180

<211> 65
 <212> PRT
 <213> B.fragilis

<400> 8180

Asn	Tyr	Thr	Glu	Ser	Thr	Ser	Lys	Glu	His	Gln	Gly	Val	Glu	Tyr	Phe
1				5					10					15	
His	Thr	Leu	Phe	His	Ile	Phe	His	Asn	Ile	Pro	His	Cys	Ile	Pro	Phe
		20					25					30			
Pro	Phe	Ile	Phe	Tyr	Ser	Pro	Thr	Asn	Gln	Gln	Ile	Ser	Ser	His	Val
		35					40					45			
Phe	Phe	Leu	Ala	Gln	Asp	Leu	Gly	Asn	Thr	Gln	Tyr	Lys	Cys	Leu	Thr
	50					55					60				

Lys
65

<210> 8181

<211> 364
 <212> PRT
 <213> B.fragilis

<400> 8181

Arg	Ser	Glu	Glu	Ile	Gly	Met	Ala	Lys	Asp	Tyr	Val	Leu	Glu	Lys	Arg
1				5					10					15	
Lys	Tyr	Val	Ile	Gly	Gly	Val	Ala	Leu	Ala	Ile	Val	Leu	Ile	Tyr	Leu
		20					25					30			
Leu	Arg	Leu	Phe	Ser	Leu	Gln	Ile	Ala	Thr	Asp	Asp	Tyr	Lys	Lys	Asn
		35				40						45			
Ala	Asp	Ser	Asn	Ala	Phe	Leu	Asn	Lys	Ile	Gln	Tyr	Pro	Ser	Arg	Gly
	50					55					60				
Ala	Met	Tyr	Asp	Arg	Asn	Asp	Lys	Leu	Leu	Val	Phe	Asn	Gln	Pro	Ala
65					70					75				80	
Tyr	Asp	Ile	Thr	Met	Val	Pro	Lys	Glu	Val	Glu	Asn	Leu	Asp	Thr	Leu
				85					90					95	
Asp	Leu	Cys	Gln	Thr	Leu	Asn	Ile	Thr	Arg	Ala	Gln	Phe	Leu	Lys	Ile
			100					105					110		
Met	Ser	Asp	Met	Lys	Asp	Arg	Arg	Arg	Asn	Pro	Gly	Tyr	Ser	Arg	Tyr
		115				120						125			
Thr	Asn	Gln	Val	Phe	Met	Ser	Gln	Leu	Ser	Ala	Glu	Glu	Cys	Gly	Val
						135					140				
Phe	Gln	Glu	Lys	Leu	Phe	Lys	Phe	His	Gly	Phe	Tyr	Ile	Gln	Arg	Arg
145					150					155				160	
Thr	Ile	Arg	Gln	Tyr	Ser	Tyr	Asn	Ser	Ala	Ala	His	Val	Leu	Gly	Asp
				165					170					175	
Ile	Gly	Glu	Val	Ser	Met	Lys	Asp	Ile	Glu	Asn	Asp	Asp	Tyr	Tyr	Ile
			180					185					190		
Arg	Gly	Asp	Tyr	Ile	Gly	Lys	Gln	Gly	Ile	Glu	Lys	Ser	Tyr	Glu	Ser
		195					200					205			
Tyr	Leu	Arg	Gly	Glu	Lys	Gly	Val	Glu	Val	Leu	Leu	Arg	Asp	Ala	His
	210					215					220				
Gly	Arg	Ile	Gln	Gly	His	Tyr	Met	Asp	Gly	Lys	Tyr	Asp	Lys	Arg	Pro
225					230					235				240	
Ile	Pro	Gly	Lys	Asn	Leu	Lys	Leu	Gly	Ile	Asp	Ile	Asp	Leu	Gln	Met
			245						250					255	
Leu	Gly	Glu	Arg	Leu	Leu	Lys	Asn	Lys	Ile	Gly	Ser	Ile	Val	Ala	Ile
		260						265					270		
Glu	Pro	Glu	Thr	Gly	Glu	Ile	Leu	Cys	Met	Val	Ser	Ser	Pro	Asp	Phe
		275					280					285			

Asp Pro Arg Leu Met Ile Gly Arg Gln Arg Gly Lys Asn His Leu Met

290 295 300
 Leu Gln Arg Asp Pro Met Lys Pro Leu Leu Asn Arg Ser Ile Met Gly
 305 310 315 320
 Val Tyr Pro Pro Gly Ser Thr Phe Lys Thr Ala Gln Ala Leu Thr Phe
 325 330 335
 Leu Gln Glu Gly Ile Ile Gln Thr Asn Thr Pro Ala Phe Pro Cys Gly
 340 345 350
 Leu His His Arg Ala Glu Gly Ser Ser Gly Gly Leu
 355 360

<210> 8182
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8182
 Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
 1 5 10 15
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
 20 25 30
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
 35 40 45
 Arg Ala Thr Gln Asp Thr Thr Thr Leu Arg Leu Pro
 50 55 60

<210> 8183
 <211> 290
 <212> PRT
 <213> B.fragilis

<400> 8183
 Ile Val Val Cys Asn Leu Tyr Val Phe Met Arg Asn Leu Leu Asn Phe
 1 5 10 15
 Leu Leu Lys Tyr Asn His Trp Phe Leu Phe Ile Leu Leu Glu Val Ile
 20 25 30
 Ser Phe Val Leu Leu Phe Arg Phe Asn His Tyr Gln His Ser Val Tyr
 35 40 45
 Phe Ser Ser Ala Asn Val Val Ala Gly Lys Val Tyr Glu Val Ser Gly
 50 55 60
 Gly Ile Thr Ser Tyr Phe His Leu Lys Ser Val Asn Glu Asp Leu Leu
 65 70 75 80
 Asp Arg Ile Met Glu Leu Glu Gln Gln Asn Arg Asn Leu Glu Asn Ala
 85 90 95
 Leu Val Lys His Leu Ser Asp Ser Thr Glu Leu Asn Ser Ile Arg Asn
 100 105 110
 Leu Ser Asp Thr Asp Tyr Glu Ile Phe Lys Ala Arg Val Ile Asn Asn
 115 120 125
 Ser Leu Asn Leu Val Asp Asn Tyr Ile Thr Leu Asn Arg Gly Ser Lys
 130 135 140
 Asp Gly Ile Arg Pro Glu Met Gly Val Val Asp Gly Asn Gly Val Val
 145 150 155 160
 Gly Ile Val Tyr Glu Thr Ser Ser His Tyr Ser Arg Val Ile Ser Val
 165 170 175
 Leu Asn Ser Lys Ser Ser Ile Ser Cys Lys Ile Val Gly Ser Glu Tyr
 180 185 190
 Phe Gly Tyr Leu Lys Trp Glu Tyr Gly Asp Ala Arg Tyr Ala Tyr Leu
 195 200 205
 Lys Asp Leu Pro Arg His Ala Glu Phe Asn Leu Gly Asp Thr Val Val
 210 215 220

Thr	Ser	Gly	Tyr	Ser	Thr	Val	Phe	Pro	Glu	Gly	Ile	Met	Ile	Gly	Thr
225					230					235					240
Val	Asp	Asp	Met	Ala	Asp	Ser	Asn	Asp	Gly	Leu	Ser	Tyr	Leu	Leu	Lys
				245					250					255	
Val	Lys	Leu	Ala	Thr	Asp	Phe	Gly	Lys	Val	Ser	Glu	Val	Arg	Val	Ile
			260				265					270			
Ala	Arg	Thr	Gly	Gln	Arg	Glu	Gln	Lys	Glu	Leu	Glu	Gln	Lys	Ser	Leu
		275				280						285			
Ala	Gln														
290															

<210> 8184

<211> 681

<212> PRT

<213> B.fragilis

<400> 8184

Phe	Ile	Lys	Cys	Met	Lys	Val	Ile	Lys	Tyr	Leu	Pro	Ile	Leu	Ala	Ile
1			5						10					15	
Cys	Cys	Met	Ala	Thr	Gly	Cys	Asn	Ser	Lys	Lys	Glu	Ala	Val	Leu	Thr
		20					25						30		
Ser	Gly	Ile	Asp	Leu	Ala	Asn	Leu	Asp	Thr	Thr	Ala	Leu	Pro	Gly	Thr
	35					40						45			
Ser	Phe	Tyr	Gln	Tyr	Ala	Cys	Gly	Gly	Trp	Met	Lys	Asn	His	Pro	Leu
	50				55					60					
Thr	Asp	Glu	Tyr	Ser	Arg	Phe	Gly	Ser	Phe	Asp	Met	Leu	Ala	Glu	Asn
65					70					75				80	
Asn	Arg	Gln	Gln	Leu	Arg	Gly	Leu	Ile	Glu	Gly	Leu	Ala	Ala	Glu	Lys
			85						90					95	
His	Glu	Ala	Gly	Ser	Ile	Ala	Gln	Lys	Val	Gly	Glu	Leu	Tyr	Asn	Ile
		100					105						110		
Ala	Met	Asp	Ser	Val	Lys	Leu	Asn	Lys	Glu	Gly	Ala	Ala	Pro	Ile	Lys
		115					120					125			
Pro	Glu	Leu	Glu	Lys	Ile	Gly	Ala	Ile	Lys	Asp	Lys	Ala	Glu	Ile	Tyr
	130					135					140				
Pro	Leu	Ile	Val	Glu	Met	Gln	Lys	Arg	Gly	Met	Tyr	Pro	Tyr	Phe	Ile
145					150					155				160	
Leu	Tyr	Val	Ser	Ala	Asp	Asp	Met	Asn	Ser	Asn	Glu	Asn	Met	Val	His
			165					170						175	
Thr	Met	Gln	Gly	Gly	Leu	Gly	Met	Gly	Glu	Arg	Asp	Tyr	Tyr	Leu	Glu
		180					185						190		
Asp	Asp	Ala	Gln	Thr	Lys	Glu	Ile	Arg	Asp	Lys	Tyr	Gln	Gln	His	Val
		195					200					205			
Ser	Lys	Met	Phe	Gln	Leu	Ala	Gly	Tyr	Asp	Glu	Ala	Thr	Ala	Arg	Lys
	210					215					220				
Ala	Val	Lys	Ala	Val	Met	Asn	Ile	Glu	Thr	Arg	Leu	Ala	Gln	Ser	Ala
225					230					235				240	
Arg	Ser	Gln	Val	Glu	Leu	Arg	Asp	Pro	His	Ala	Asn	Tyr	Asn	Lys	Lys
			245					250						255	
Thr	Leu	Glu	Glu	Leu	Gln	Lys	Glu	Tyr	Pro	Ser	Phe	Ala	Trp	Asp	Val
		260					265					270			
Phe	Phe	Ser	Thr	Ala	Gly	Leu	Asn	Asn	Leu	Lys	Glu	Val	Asn	Ile	Gly
		275					280					285			
Gln	Pro	Asp	Ala	Leu	Lys	Glu	Val	Asn	Ala	Ile	Ile	Asp	Thr	Val	Ser
	290					295					300				
Leu	Ala	Asp	Gln	Asn	Tyr	Cys	Leu	Gln	Trp	Asn	Leu	Ile	Asn	Ser	Ala
305					310					315				320	
Ala	Asn	Tyr	Leu	Ser	Asp	Asp	Phe	Ile	Ala	Gln	Asp	Phe	Asp	Phe	Tyr
			325						330					335	

Gly Arg Thr Met Ser Gly Lys Lys Glu Met Gln Pro Arg Trp Lys Arg
 340 345 350
 Ala Val Ser Thr Val Asp Gly Ser Leu Gly Glu Ala Val Gly Gln Met
 355 360 365
 Tyr Val Glu Lys Tyr Phe Pro Ala Ala Ala Lys Glu Arg Met Val Ala
 370 375 380
 Leu Val Lys Asn Leu Gln Glu Ser Leu Gly Glu Arg Ile Lys Gly Leu
 385 390 395 400
 Ser Trp Met Gly Glu Glu Thr Lys Glu Lys Ala Leu Glu Lys Leu Ala
 405 410 415
 Thr Phe His Val Lys Ile Gly Tyr Pro Asp Lys Trp Lys Asp Tyr Ser
 420 425 430
 Ser Leu Glu Ile Lys Asp Asp Ser Tyr Trp Ala Asn Ile Glu Arg Ala
 435 440 445
 Asn Gln Trp Ser Tyr Asn Glu Met Ile Gly Lys Tyr Gly Lys Pro Val
 450 455 460
 Asp Lys Asp Glu Trp Tyr Met Thr Pro Gln Thr Val Asn Ala Tyr Tyr
 465 470 475 480
 Asn Pro Thr Thr Asn Glu Ile Cys Phe Pro Ala Gly Ile Leu Gln Tyr
 485 490 495
 Pro Phe Phe Asp Met Asn Ala Asp Asp Ala Phe Asn Tyr Gly Ala Ile
 500 505 510
 Gly Val Val Ile Gly His Glu Met Thr His Gly Phe Asp Asp Gln Gly
 515 520 525
 Arg Gln Tyr Asp Lys Asp Gly Asn Leu Lys Asp Trp Trp Thr Ala Glu
 530 535 540
 Asp Ala Lys Asn Phe Glu Ala Arg Ala Ala Val Met Ala Asn Phe Phe
 545 550 555 560
 Asp Ser Ile Glu Val Ala Pro Gly Val His Ala Asn Gly Glu Phe Thr
 565 570 575
 Leu Gly Glu Asn Ile Ala Asp His Gly Gly Leu Gln Val Ser Tyr Gln
 580 585 590
 Ala Phe Lys Lys Ala Thr Ala Ala Ala Pro Leu Lys Ile Glu Asn Gly
 595 600 605
 Phe Thr Pro Glu Gln Arg Phe Phe Leu Ser Tyr Ala Asn Val Trp Ala
 610 615 620
 Gly Asn Ile Arg Pro Glu Glu Ile Leu Lys Arg Thr Lys Thr Asp Pro
 625 630 635 640
 His Ser Leu Gly Lys Trp Arg Val Asp Gly Ala Leu Pro Gln Ile Gly
 645 650 655
 Ala Trp Tyr Glu Ala Phe Asn Ile Thr Glu Lys Asp Pro Met Tyr Leu
 660 665 670
 Pro Val Asp Lys Arg Val Ser Ile Trp
 675 680

<210> 8185

<211> 422

<212> PRT

<213> B.fragilis

<400> 8185

Ile Asn Met Leu Gln Ile Asn Arg His Ile Leu Asp Asn Gly Leu Arg
 1 5 10 15
 Leu Val His Ala Gln Asp Thr Ser Thr Gln Met Val Ala Leu Asn Ile
 20 25 30
 Leu Tyr Asn Val Gly Ala Arg Asp Glu Asn Pro Glu His Thr Gly Phe
 35 40 45
 Ala His Leu Phe Glu His Leu Met Phe Gly Gly Ser Val Asn Ile Pro
 50 55 60

Asp Tyr Asp Ala Pro Leu Gln Leu Ala Gly Gly Glu Asn Asn Ala Trp
 65 70 75 80
 Thr Asn Asn Asp Ile Thr Asn Tyr Tyr Leu Thr Val Pro Arg Gln Asn
 85 90 95
 Val Glu Thr Gly Phe Trp Leu Glu Ser Asp Arg Met Leu Ser Leu Asp
 100 105 110
 Phe Ser Glu Arg Ser Leu Glu Val Gln Arg Gly Val Val Met Glu Glu
 115 120 125
 Phe Lys Gln Arg Cys Leu Asn Gln Pro Tyr Gly Asp Val Gly His Leu
 130 135 140
 Leu Arg Pro Leu Ala Tyr Arg Val His Pro Tyr Gln Trp Pro Thr Ile
 145 150 155 160
 Gly Lys Glu Leu Ser His Ile Ala Asn Ala Thr Leu Glu Glu Val Lys
 165 170 175
 Asp Phe Phe Phe Arg Phe Tyr Ala Pro Asn Asn Ala Val Leu Ala Val
 180 185 190
 Thr Gly Asn Ile Ser Phe Glu Glu Ala Leu His Leu Thr Glu Lys Trp
 195 200 205
 Phe Gly Pro Ile Pro Arg Arg Glu Val Pro Leu Arg Gln Leu Pro Pro
 210 215 220
 Glu Pro Val Gln Thr Glu Glu Arg Arg Leu Val Val Glu Arg Asn Val
 225 230 235 240
 Pro Leu Asp Ser Leu Phe Met Ala Tyr His Met Cys Asp Arg Ala Asp
 245 250 255
 Ser Asp Tyr Tyr Ala Phe Asp Ile Leu Ser Asp Ile Leu Ser Asn Gly
 260 265 270
 Arg Ser Ser Arg Leu Asn Gln His Leu Val Gln Glu Lys Gln Leu Phe
 275 280 285
 Ser Ser Ile Asp Ala Tyr Ile Ser Gly Thr Leu Asp Ala Gly Leu Phe
 290 295 300
 His Ile Ser Gly Lys Pro Ala Ala Gly Val Ser Leu Glu Glu Ala Glu
 305 310 315 320
 Ala Ala Val Arg Glu Glu Leu Asn Glu Leu Gln Ser Ala Leu Ile Gln
 325 330 335
 Glu Gln Glu Leu Glu Lys Val Lys Asn Lys Phe Glu Ser Thr Gln Ile
 340 345 350
 Phe Gly Asn Ile Asn Tyr Leu Asn Val Ala Thr Asn Leu Ala Trp Phe
 355 360 365
 Glu Leu Asn Gly Arg Ala Glu Asp Met Glu Lys Glu Val Glu Arg Tyr
 370 375 380
 Arg Ala Val Thr Ala Asp Arg Leu Asn Ala Val Ala Gln Thr Ala Phe
 385 390 395 400
 Arg Glu Glu Asn Gly Val Val Leu Tyr Tyr Lys Ser Ser Arg Gly Glu
 405 410 415
 Lys Asp Glu Thr Tyr Ile
 420

<210> 8186

<211> 85

<212> PRT

<213> B.fragilis

<400> 8186

His Tyr His Arg His Ser Thr Ile His Gln Arg Asn Thr Lys Gln Ile
 1 5 10 15
 Gly Leu Pro Ile Leu His His Leu Phe Thr Ala Lys Ile His Lys Thr
 20 25 30
 Arg Leu Thr Glu Lys Ser Ile Ser Tyr His Asn Ser Ile Cys Leu Glu
 35 40 45

Trp Asn Asn Ala Glu Ile Leu Ser Gly Thr Ala Lys Val Ala Leu Asn
 50 55 60
 Asn Asn Ser Arg Leu Ile Ser Glu Ser Ser Pro Asp Ser Leu Gly Lys
 65 70 75 80
 Ser Lys Lys Leu Pro
 85

<210> 8187
 <211> 252
 <212> PRT
 <213> B.fragilis

<400> 8187
 Phe Lys Phe Ser Met Gly Leu Leu Asp Gly Lys Thr Ala Ile Val Thr
 1 5 10 15
 Gly Ala Ala Arg Gly Ile Gly Lys Ala Ile Ala Leu Lys Phe Ala Ser
 20 25 30
 Glu Gly Ala Asn Ile Ala Phe Thr Asp Leu Val Ile Asp Glu Asn Ala
 35 40 45
 Gln Asn Thr Ala Lys Glu Ile Glu Ala Met Gly Val Lys Ala Lys Gly
 50 55 60
 Tyr Ala Ser Asn Ala Ala Asn Phe Glu Asp Thr Ala Lys Val Val Glu
 65 70 75 80
 Glu Ile His Lys Asp Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Ala
 85 90 95
 Gly Ile Thr Arg Asp Gly Leu Met Met Arg Met Ser Glu Gln Gln Trp
 100 105 110
 Asp Met Val Ile Asn Val Asn Leu Lys Ser Ala Phe Asn Phe Val His
 115 120 125
 Ala Cys Thr Pro Ile Met Met Arg Gln Lys Ala Gly Ser Ile Ile Asn
 130 135 140
 Met Ala Ser Val Val Gly Val His Gly Asn Ala Gly Gln Ala Asn Tyr
 145 150 155 160
 Ser Ala Ser Lys Ala Gly Met Ile Gly Leu Ala Lys Ser Ile Ala Gln
 165 170 175
 Glu Leu Gly Ser Arg Gly Ile Arg Ala Asn Ala Ile Ala Pro Gly Phe
 180 185 190
 Ile Ile Thr Asp Met Thr Ala Gly Leu Ser Glu Glu Val Lys Thr Glu
 195 200 205
 Trp Ala Lys Lys Ile Pro Leu Arg Arg Gly Gly Thr Pro Glu Asp Val
 210 215 220
 Ala Asn Ile Ala Thr Phe Leu Ala Ser Asp Met Ser Ser Tyr Val Ser
 225 230 235 240
 Gly Gln Val Ile Gln Val Asp Gly Gly Met Asn Met
 245 250

<210> 8188
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 8188
 Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr

50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 8189
 <211> 462
 <212> PRT
 <213> B.fragilis

<400> 8189
 Leu Lys Glu Gly Cys Ser Arg Glu Tyr Phe Ser Phe Leu Ala Ala Ser
 1 5 10 15
 Phe Phe Ser Tyr Leu Lys Leu Lys Ala Met Lys Asn Phe Arg Val Ala
 20 25 30
 Ile Arg Arg Ser Tyr Leu Ser Val Ile Leu Leu Leu Leu Ala Leu Val
 35 40 45
 Cys Tyr Leu Leu Tyr Pro Leu Glu Ile Pro Ala Leu Ser Ser Glu Ser
 50 55 60
 Ala Ile Glu Ile Asp Arg Tyr Val His Ser Val Pro Cys Thr Val Gln
 65 70 75 80
 Met Pro Asp Thr Ala Thr Asp Phe Leu Cys Phe Leu Asp Glu Glu Leu
 85 90 95
 Lys Asn Lys Gln Ile Leu Leu Leu Gly Glu Gln Leu His Gln Asp Gly
 100 105 110
 Ala Thr Leu Gln Met Lys Thr Arg Met Val Arg Tyr Leu His Glu Lys
 115 120 125
 Leu Gly Tyr Asn Val Ile Leu Tyr Glu Thr Gly Leu Tyr Asp Met Tyr
 130 135 140
 Leu Met Asn Gln Asp Gly Arg Gln Arg Met Asn Pro Ser Lys Ala Val
 145 150 155 160
 Trp Thr Phe Trp Trp Gly Ser Asn Glu Thr Lys Ser Leu Trp Glu Tyr
 165 170 175
 Tyr Arg Ser His Pro Ser Ile Ala Leu Asp Gly Phe Asp Cys Gln Leu
 180 185 190
 Thr Asn Tyr Gly Gln Gly Arg Lys His Met Glu Ser Val Glu Lys Tyr
 195 200 205
 Leu Asn Gly Tyr Ser Ser Ser Leu Ser Asp Phe Pro Tyr Val Gln Arg
 210 215 220
 Phe Phe Leu Gln Met Ser Glu Phe Asn Gly Asn Trp Asn Tyr Phe Gly
 225 230 235 240
 Tyr Arg Leu Asp Arg Met Leu Lys Asp Ser Ile Val Gln Asp Phe Asn
 245 250 255
 Lys Leu Glu Asn Arg Ile His Glu Glu Ser Arg Tyr Ser Met Glu Asp
 260 265 270
 Gly Leu His Gln Arg Tyr Ile Ala Gly Leu Lys Leu Arg Tyr Glu Ser
 275 280 285
 Ile Trp Lys Tyr Arg Asn Val Gly Asp Leu Thr Arg Met Asn Leu Arg
 290 295 300
 Asp Ser Ile Met Ala Asp Asn Leu Thr Trp Leu Val Asp Ser Val Tyr
 305 310 315 320
 Lys Asp Gln Lys Val Ile Val Trp Cys Ala Asn Val His Val Phe Asn
 325 330 335
 Arg Gly Arg Met Gln Val Asp Ser Thr Arg Phe Thr Ser Met Gly Gln
 340 345 350
 Arg Leu Lys Ile His Phe Gly Asp Arg Met Tyr Thr Ile Ala Phe Thr
 355 360 365
 Ser Tyr Ala Arg Arg Asn Thr Asp Gly Gly Ile Arg Asp Pro Leu Ser

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370 375 380
 Thr Leu Ser Leu Glu Tyr Leu Leu His Arg Arg Lys Val Gly Phe Ala
 385 390 395 400
 Tyr Leu Asn Phe Asn Glu Leu Pro Val Asp Ser Arg Trp Arg Gln Ala
 405 410 415
 Phe Ile Ser Gly Leu Asp Gln Gly Ala Ser Leu Ser Glu Val Trp Ser
 420 425 430
 Glu Gln Met Asp Met Leu Phe Tyr Ile Asp Leu Asn Tyr Asp Val Tyr
 435 440 445
 Tyr Asp Lys Thr Phe Ile Asn Lys Met Tyr Lys Trp Ala Lys
 450 455 460

<210> 8190
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 8190
 Tyr Phe Ile Ile Arg Val Val Glu Glu Arg Arg Met Arg Leu Ile Tyr
 1 5 10 15
 Lys Asn His Tyr Lys Ala Leu Phe Leu Leu Gly Leu Pro Ile Val Ile
 20 25 30
 Gly Gln Val Gly Val Ile Val Leu Gly Phe Ala Asp Thr Leu Met Ile
 35 40 45
 Gly His His Ser Thr Asn Glu Leu Gly Ala Ala Ser Phe Val Asn Asn
 50 55 60
 Met Phe Thr Leu Ala Ile Phe Ser Thr Gly Phe Ser Tyr Gly Leu
 65 70 75 80
 Thr Pro Ile Val Gly Gly Phe Tyr Gly Thr Arg Arg Phe Ala Ser Ala
 85 90 95
 Gly Gln Ala Leu Arg Cys Ser Leu Leu Ala Asn Leu Leu Val Gly Ile
 100 105 110
 Leu Leu Thr Val Ile Met Gly Ile Leu Tyr Leu Asn Val Glu Arg Leu
 115 120 125
 Gly Gln Pro Glu Glu Leu Leu Pro Leu Ile Lys Pro Tyr Tyr Leu Ile
 130 135 140
 Leu Leu Ala Ser Leu Val Phe Val Leu Leu Phe Asn Gly Phe Lys Gln
 145 150 155 160
 Phe Thr Asp Gly Ile Thr Asp Thr Lys Thr Ala Met Trp Ile Leu Leu
 165 170 175
 Gly Gly Asn Val Leu Asn Leu Lys Ser Ala Thr Ile Ile Gln Tyr Thr
 180 185 190
 Ile Lys Gly Arg Phe Met Ser Arg
 195 200

<210> 8191
 <211> 243
 <212> PRT
 <213> B.fragilis

<400> 8191
 Tyr Val Phe Leu Cys Ile Arg Ser Gly Asp Ser Gly Arg Trp Trp Tyr
 1 5 10 15
 Glu Tyr Val Ile Phe Gly Met Thr Val Ile Tyr Glu Asp Asn His Ile
 20 25 30
 Ile Val Val Asn Lys Thr Ala Ser Glu Ile Val Gln Gly Asp Lys Thr
 35 40 45
 Gly Asp Thr Pro Leu Ser Glu Thr Val Lys Gln Tyr Leu Lys Asp Lys
 50 55 60

8190
 200
 PRT
 B.fragilis

Tyr Gln Lys Pro Gly Asn Val Phe Ile Gly Val Thr His Arg Leu Asp
 65 70 75 80
 Arg Pro Val Ser Gly Leu Val Ile Phe Ala Lys Thr Ser Lys Ala Leu
 85 90 95
 Ser Arg Leu Asn Glu Met Phe Lys Asn Ser Glu Val Lys Lys Thr Tyr
 100 105 110
 Trp Ala Ile Val Lys Asn Cys Pro Lys Gln Pro Glu Gly Glu Leu Val
 115 120 125
 His Tyr Leu Val Arg Asn Glu Lys Gln Asn Lys Ser Tyr Ala Tyr Asp
 130 135 140
 Lys Glu Val Pro Asn Ser Lys Lys Ala Ile Leu Asn Tyr Lys Leu Ile
 145 150 155 160
 Gly His Ser Asp His Tyr Phe Leu Leu Glu Val Asp Leu Lys Thr Gly
 165 170 175
 Arg His His Gln Ile Arg Cys Gln Leu Ala Lys Met Gly Cys Pro Ile
 180 185 190
 Lys Gly Asp Leu Lys Tyr Gly Ser Ala Arg Ser Asn Pro Asp Gly Ser
 195 200 205
 Ile Cys Leu His Ala Arg His Val Arg Phe Val His Pro Val Ser Lys
 210 215 220
 Glu Leu Ile Glu Leu Asp Ala Pro Val Pro Asp Ser Asn Leu Trp His
 225 230 235 240
 Gly Phe Gln

<210> 8192

<211> 767

<212> PRT

<213> B.fragilis

<400> 8192

Val Met Ala Ile Pro Ser Arg Phe Thr Lys Val Lys Ile Ala Ala Gly
 1 5 10 15
 Tyr Thr Leu Leu Leu Val Val Leu Leu Leu Ser Leu Leu Phe Val His
 20 25 30
 Arg Glu Met Glu Lys Leu Ser Asp Thr Asp Asp Val Gln Ser Leu Gln
 35 40 45
 Thr Asp Ser Leu Leu Leu Leu Lys Glu Lys Asp Glu Asn Thr Ile
 50 55 60
 Arg Met Leu Gln Ile Ile Asn Glu Ala Asn Glu Ser Met Ile Thr Pro
 65 70 75 80
 Val Glu Leu Asp Ser Ile Ile Ala Glu Gln Asp Thr Val Ile Thr Gln
 85 90 95
 Gln Arg Val Gln His Arg Ile Ile Thr Lys Arg Asp Ser Val Ile Thr
 100 105 110
 Lys Arg Lys Lys Lys Gly Phe Phe Arg Arg Leu Gly Glu Val Phe Ala
 115 120 125
 Pro Ser Lys Glu Asp Thr Ala Val Leu Val Asn Thr Ala Val Glu Phe
 130 135 140
 Ala Thr Asp Thr Ile Leu Glu Pro Tyr Asn Pro Ile Asp Ser Leu His
 145 150 155 160
 Gln Arg Ile Arg Thr Val Thr Lys Arg Lys Ser Arg Pro Val Val Arg
 165 170 175
 Pro Asn Tyr Asn Ala Arg Leu Arg Arg Met Asn Lys Glu Leu Thr Thr
 180 185 190
 Arg Ile Asp Ser Met Ile Thr Thr Tyr Glu Gln Val Val Thr Gln Arg
 195 200 205
 Ala Met Asp Asn Ala Ser Glu Gln Gln Glu Leu Arg Asn Arg Ser Thr
 210 215 220

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Arg Thr Ile Gly Gly Ile Ala Ile Ala Ala Val Leu Leu Ser Ala Cys
 225 230 235 240
 Phe Leu Ile Met Ile Trp Arg Asp Ile Thr Arg Ser Asn Arg Tyr Arg
 245 250 255
 Lys Glu Leu Glu Glu Ala Asn Lys Arg Ala Glu Ala Leu Leu Glu Ala
 260 265 270
 Arg Glu Lys Leu Met Leu Ala Ile Thr His Asp Phe Lys Ala Pro Leu
 275 280 285
 Gly Ser Ile Ile Gly Tyr Thr Asp Leu Leu Thr Gly Leu Thr Thr Asp
 290 295 300
 Lys Arg Gln Arg Phe Tyr Leu Asp Asn Met Lys Ser Ser Ser Gln His
 305 310 315 320
 Leu Leu Lys Leu Val Ser Asp Leu Leu Asp Phe His Arg Leu Asp Leu
 325 330 335
 Asn Lys Ala Glu Val Asn Arg Val Thr Phe Asn Pro Ala Gln Leu Phe
 340 345 350
 Glu Glu Ile Arg Ile Ser Phe Lys Pro Leu Thr Asp Ala Lys His Leu
 355 360 365
 Thr Leu Ser Cys Ser Ile Asp Ala Glu Leu Asp Gly Arg Phe Ile Ser
 370 375 380
 Asp Pro Leu Arg Ile Arg Gln Ile Val Asn Asn Leu Leu Ser Asn Ala
 385 390 395 400
 Val Lys Phe Thr Ala Lys Gly Ser Ile Ala Leu Asn Ile Thr Tyr His
 405 410 415
 Ser Ser Ser Val Arg Ile Glu Val Val Asp Thr Gly Lys Gly Met Ala
 420 425 430
 Pro Gly Asp Arg Glu Lys Ile Phe Gly Leu Gly Leu Ser Ile Val His Lys
 435 440 445
 Ala Gln Gly Glu Glu Gly Phe Gly Leu Gly Leu Ser Ile Val His Lys
 450 455 460
 Leu Val Thr Leu Leu Glu Gly Ser Ile Ser Val Gln Ser Thr Leu Gly
 465 470 475 480
 Glu Gly Ser Arg Phe Ile Val Ile Leu Pro Leu Tyr Pro Val Gly Pro
 485 490 495
 Val Thr Gly Glu Lys Arg Glu Gly Asn Val Ser Ser Val Ser Thr Thr
 500 505 510
 Asp Gln Ala Gly Glu Asp Gly Val Met Ala Ser Pro Lys Leu Asn Arg
 515 520 525
 Val Leu Leu Ile Asp Asp Asp Arg Ile Gln Leu Ala Leu Thr Ala Ala
 530 535 540
 Met Leu Glu Gln Gln Gly Ile Gln Ala Val Cys Cys Gln Gln Pro Asp
 545 550 555 560
 Glu Leu Ile Glu Gln Leu Arg Thr Ala Thr Phe Asp Val Leu Leu Thr
 565 570 575
 Asp Val Gln Met Pro Ala Ile Asn Gly Phe Asp Leu Leu Lys Leu Leu
 580 585 590
 Arg Ala Ser Asn Ile Pro Gln Ala Arg Thr Ile Pro Val Ile Ala Val
 595 600 605
 Thr Ala Arg Ser Glu Met Asn Glu Gln Asp Phe Gln Glu His Gly Phe
 610 615 620
 Ala Gly Cys Leu His Lys Pro Phe Thr Val Lys Glu Leu Leu Thr Ile
 625 630 635 640
 Ile Ser Gly Glu Glu Met Thr Gly Ser Ser Ala Glu Leu Thr Pro Asp
 645 650 655
 Ser Leu Asn Phe Arg Ala Leu Thr Ala Phe Ser Glu Asp Asp Pro Glu
 660 665 670
 Ala Ala Ser Thr Ile Ile Gln Thr Phe Ile Glu Glu Thr Glu Lys Asn
 675 680 685
 Arg Asn Arg Met Glu Ser Ala Ile Arg Ala Thr Asp Val Asp Gly Ile

690		695		700
Ala Gly Met Ala His Lys Leu Leu Pro Leu Phe Thr Leu Leu Gly Ala				
705		710		715
Ser Glu Ala Leu Pro Leu Leu Leu Trp Leu Glu Gln Arg Arg Gly Glu				
	725		730	735
Ala Val Ser Asp Glu Met Ile Gln Lys Ala Asn Glu Ala Leu Arg Gln				
	740		745	750
Val Asp Ile Val Met Ala Glu Ala Arg Arg Tyr Ala Ala Gly Asp				
	755		760	765

<210> 8193

<211> 319

<212> PRT

<213> B.fragilis

<400> 8193

Thr Thr Val Ile Met Thr Lys Lys Gln Phe Trp Leu Ile Gly Ala Trp				
1	5		10	15
Ser Leu Ile Ala Leu Ser Ala Cys Ser Ser Lys Pro Lys Asp Gly Leu				
	20		25	30
Thr Asp Thr Tyr Thr Ser Gly Val Ile Ala Ile Thr Ala Asp Glu Ser				
	35		40	45
Phe Gln Pro Ile Val Gln Glu Glu Ile Asp Val Phe Glu Gly Leu Phe				
	50		55	60
Pro Leu Ala Gly Ile Val Pro Arg Tyr Thr Thr Glu Val Asp Ala Ile				
65	70		75	80
Asn Gln Leu Leu Lys Asp Ser Val Arg Leu Ala Ile Thr Thr Arg Thr				
	85		90	95
Leu Thr Pro Glu Glu Met Asn Ser Phe His Ser Arg Lys Phe Phe Pro				
	100		105	110
Arg Glu Ile Lys Leu Ala Thr Asp Gly Leu Ala Leu Ile Val Asn Arg				
	115		120	125
Gln Asn Ala Asp Ser Leu Ile Ser Val Arg Asp Ile Arg Arg Ile Leu				
	130		135	140
Thr Gly Gln Val Gln Lys Trp Lys Glu Leu Tyr Pro Ala Ser Gly Leu				
145	150		155	160
Gly Asp Ile Gln Leu Val Phe Asp Asn Lys Asn Ser Ser Thr Val Arg				
	165		170	175
Phe Ala Val Asp Ser Ile Cys Lys Gly Ala Pro Leu Ser Asp Lys Asp				
	180		185	190
Val Lys Ala Leu Lys Thr Asn Gln Val Ile Asp Tyr Val Ala His				
	195		200	205
Thr Pro Asp Ala Ile Gly Val Ile Gly Val Asn Trp Leu Gly Asn Arg				
	210		215	220
Ser Asp Thr Thr Asn Leu Ser Phe Arg Asp Glu Ile Arg Val Met Ser				
225	230		235	240
Val Ser Ala Asp Asp Val Ala Thr Val Glu Asn Ser Tyr Lys Pro Tyr				
	245		250	255
Gln Ala Tyr Leu Tyr Tyr Gly Asn Tyr Pro Leu Ala Arg Pro Ile Tyr				
	260		265	270
Val Leu Leu Asn Asp Pro Arg Asn Ala Leu Pro Trp Gly Phe Ala Ser				
	275		280	285
Phe Leu Thr Ser Asp Arg Gly Gln Arg Ile Ile Leu Lys Ser Gly Leu				
	290		295	300
Val Pro Ala Thr Gln Pro Val Arg Ile Val Asp Val Lys Asp Glu				
305	310		315	

<210> 8194

<211> 205

<212> PRT

<213> B.fragilis

<400> 8194

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Ile Leu Thr Ile Met Gly Arg Ala Lys Ile Lys Lys Lys Ser Thr Phe
1           5           10           15
Ile Asp Met Thr Ala Met Ser Asp Val Thr Val Leu Leu Leu Thr Phe
           20           25           30
Phe Met Leu Thr Ser Thr Phe Val Lys Lys Glu Pro Val Gln Val Thr
           35           40           45
Thr Pro Ala Ser Val Ser Glu Ile Lys Ile Pro Glu Lys Asn Ile Leu
           50           55           60
Gln Ile Leu Val Asp Pro Asn Gly Lys Ile Phe Met Ser Met Asp Lys
65           70           75           80
Gln Ser Asp Leu Lys Ala Val Leu Glu Ser Met Gly Gln Glu Tyr Gly
           85           90           95
Val Thr Phe Thr Pro Glu Gln Glu Lys Lys Phe Met Leu Ala Ser Thr
           100          105          110
Phe Gly Val Pro Met Lys Asn Met Lys Thr Tyr Leu Asp Leu Pro Thr
           115          120          125
Asp Lys Gln Asp Ala Val Leu Lys Asn Glu Gly Ile Pro Cys Asp Ser
           130          135          140
Leu Asp Asn Gln Phe Lys Ser Trp Val Arg Asn Ala Arg Ala Val Asn
145           150          155          160
Ala Asp Leu Arg Ile Ala Ile Lys Ala Asp Ala Asp Thr Pro Tyr Ser
           165          170          175
Val Ile Lys Asn Val Met Asn Ser Leu Gln Asp Leu Arg Glu Asn Arg
           180          185          190
Tyr Asn Leu Ile Thr Ser Leu Lys Thr Thr Ser Glu Asn
           195          200          205

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<210> 8195

<211> 274

<212> PRT

<213> B.fragilis

<400> 8195

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Lys Ser Lys Met Ala Lys Ile Asp Leu Thr Ser Phe Glu Trp Cys Glu
1           5           10           15
Leu Ile Phe Lys Gly Lys Asn Lys Ala Tyr Gly Ala Tyr Lys Met Arg
           20           25           30
Ala Asp Ser Pro Lys Arg His Asn Val Ala Met Val Ile Val Leu Ile
           35           40           45
Ile Ala Leu Val Gly Phe Ser Leu Pro Thr Leu Ile Lys Met Ala Thr
           50           55           60
Pro Lys Gln Lys Glu Val Met Thr Glu Val Thr Thr Leu Ser Gln Leu
65           70           75           80
Glu Glu Pro Glu Val Lys Gln Glu Glu Met Lys Arg Val Glu Pro Val
           85           90           95
Ala Pro Pro Pro Pro Ala Leu Lys Ser Ser Ile Lys Phe Thr Ala Pro
           100          105          110
Val Ile Lys Lys Asp Glu Glu Val His Glu Asp Asp Glu Ile Lys Ser
           115          120          125
Gln Glu Glu Leu Thr Gln Thr Lys Val Ala Ile Ser Ile Ala Asp Val
           130          135          140
Lys Gly Asn Asp Glu Ala Asn Gly Lys Asp Ile Ala Asp Leu Lys Gln
145           150          155          160
Val Val Thr Gln Ala Glu Pro Ala Glu Glu Gln Val Phe Asp Met Val
           165          170          175

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Glu	Gln	Met	Pro	Thr	Phe	Pro	Gly	Gly	Thr	Thr	Glu	Leu	Met	Lys	Tyr
			180					185					190		
Ile	Gly	Glu	His	Leu	Lys	Tyr	Pro	Pro	Ile	Ala	Ala	Glu	Asn	Gly	Thr
		195					200					205			
Gln	Gly	Lys	Val	Ile	Cys	Arg	Phe	Val	Ile	Gly	Lys	Asp	Gly	Gln	Val
	210					215					220				
Arg	Asp	Val	Thr	Ile	Ala	Arg	Ser	Leu	Asp	Pro	Tyr	Cys	Asp	Lys	Glu
225					230					235					240
Ala	Ile	Arg	Val	Ile	Lys	Ser	Met	Pro	Lys	Trp	Ile	Pro	Gly	Lys	Gln
				245					250					255	
Asn	Gly	Lys	Ala	Val	Ala	Val	Asn	Phe	Thr	Val	Pro	Ile	Val	Phe	Lys
			260					265					270		
Leu	Gln														

<210> 8196

<211> 300

<212> PRT

<213> B.fragilis

<400> 8196

Met	Gly	Lys	Ile	Glu	Ile	Arg	Asn	Leu	Cys	Phe	Arg	Tyr	Gly	Lys	Gln
1			5						10					15	
Met	Val	Leu	Asn	Asn	Leu	Asn	Leu	Asp	Ile	Pro	Glu	Asn	Ala	Leu	Tyr
			20					25					30		
Gly	Tyr	Leu	Gly	Asn	Asn	Gly	Ser	Gly	Lys	Thr	Thr	Thr	Ile	Gln	Val
		35					40					45			
Leu	Leu	Gly	Leu	Ala	Arg	Pro	Val	Lys	Gly	Glu	Val	Leu	Tyr	Asp	Gly
	50					55					60				
Gln	Pro	Phe	Arg	Asp	Gln	Arg	Glu	Lys	Gln	Leu	Arg	Lys	Ile	Gly	Leu
65					70				75						80
Cys	Pro	Gly	Glu	Pro	Phe	Tyr	Tyr	Asp	Asn	Leu	Thr	Gly	Tyr	Glu	His
				85					90					95	
Leu	Ala	Tyr	Leu	Asp	His	Ile	Tyr	His	Cys	Gly	Arg	Thr	Ala	Ile	Asn
			100					105					110		
Lys	Val	Leu	Ala	Ile	Thr	Gly	Ile	Glu	Asn	Ala	Arg	Asn	Lys	Lys	Leu
		115					120					125			
Arg	His	Tyr	Ser	Thr	Gly	Met	Ile	His	Arg	Leu	Gly	Met	Ala	Met	Ala
	130					135					140				
Leu	Leu	His	Asp	Pro	Asp	Ile	Leu	Phe	Leu	Asp	Glu	Pro	Leu	Asn	Gly
145					150					155					160
Leu	Asp	Pro	Glu	Gly	Ile	His	Ser	Ile	Arg	Glu	Leu	Leu	Leu	Gln	Leu
				165					170					175	
His	Gln	Glu	Gly	Lys	Thr	Val	Phe	Leu	Ser	Ser	His	Leu	Leu	Asp	Glu
			180					185						190	
Val	Glu	Lys	Thr	Cys	Thr	His	Val	Gly	Ile	Leu	Gln	His	Gly	Cys	Leu
		195					200					205			
Leu	Tyr	Gln	Gly	Asp	Leu	Ser	Glu	Leu	Leu	Asn	Ser	Ile	Glu	Lys	Arg
	210					215					220				
Ile	His	Ile	Arg	Leu	Asp	Lys	Val	Asp	Leu	Leu	His	Ser	Val	Cys	Lys
225					230					235					240
Glu	Val	Gln	Ile	Asp	Ser	Arg	Ile	Lys	Ser	Glu	Ser	Ile	Leu	Glu	Val
				245					250					255	
Ile	Leu	Ser	Asn	Asp	Thr	Thr	Tyr	Asp	Arg	Leu	Ile	Glu	Leu	Leu	Gly
			260					265						270	
Gln	Gly	Gly	Tyr	His	Ile	Ser	Ala	Ile	Gln	Pro	Leu	Glu	Asn	Thr	Leu
		275					280					285			
Glu	Ser	Val	Tyr	Leu	Lys	Leu	Thr	Ser	Gln	Thr	Lys				
	290					295					300				

<210> 8197
 <211> 275
 <212> PRT
 <213> B.fragilis

<400> 8197

Thr Asn Arg Ile Met Ile Arg Asp Thr Phe Phe Ser Gln Thr Arg Phe
 1 5 10 15
 Val Asn Leu Cys Arg Lys Glu Met Val Glu Asn Trp Lys Ser Asn Leu
 20 25 30
 Leu Arg Val Ala Leu Met Tyr Gly Ala Met Ala Val Ile Met Leu Trp
 35 40 45
 Ser Gly Tyr Leu Ser Tyr Arg Ala Val Gly Gln Asp Thr Asp Ser Thr
 50 55 60
 Trp Glu Phe Asn Leu Val Ile Phe Met Trp Gly Leu Cys Val Phe Gly
 65 70 75 80
 Cys Leu Ser Ala Ser Phe Thr Met Glu Arg Met Lys Ser Lys Thr Gly
 85 90 95
 Arg Leu Ser Val Leu Met Thr Pro Ala Thr Ser Phe Glu Lys Tyr Phe
 100 105 110
 Ser Arg Trp Leu Val Phe Thr Val Val Phe Leu Ile Val Phe Leu Ile
 115 120 125
 Thr Tyr Lys Leu Ala Asp Tyr Thr Lys Val Leu Val Tyr Ser Leu Val
 130 135 140
 Tyr Pro Glu Asn Asn Ala Ile Ala Ile Thr Pro Leu Ser His Leu Phe
 145 150 155 160
 Gly Glu Asn Thr Asp Tyr Tyr Thr Val Phe Lys His Thr His Thr Phe
 165 170 175
 Val Leu Met Ile Ala Ser Tyr Phe Phe Cys Gln Ser Cys Phe Val Leu
 180 185 190
 Gly Ser Ser Val Trp Pro Lys Asn Ser Phe Ile Lys Thr Phe Ser Ala
 195 200 205
 Gly Met Ile Ile Phe Ile Ala Tyr Val Leu Ile Val Val Gly Phe Ala
 210 215 220
 Lys Leu Ile Trp Pro Asp Gln Ile Ser Tyr Asn Pro Asp Met Ser Glu
 225 230 235 240
 Glu Thr Ala Phe Ala Cys Leu Ser Ala Ile Ala Val Leu Phe Thr Leu
 245 250 255
 Thr Asn Trp Thr Leu Ala Tyr Phe Arg Phe Lys Glu Ser Glu Ile Ile
 260 265 270
 Asn Arg Met
 275

<210> 8198
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 8198

Met Lys Met Ile Thr Val Glu Asn Leu Ser Phe Leu Tyr Arg Lys Ser
 1 5 10 15
 Lys Arg Ala Val Leu His Asp Phe Ser Leu Ser Leu Glu Lys Gly Arg
 20 25 30
 Val Tyr Gly Leu Leu Gly Lys Asn Gly Ala Gly Lys Ser Thr Leu Leu
 35 40 45
 Tyr Leu Met Ser Gly Leu Leu Thr Pro Lys Ser Gly Lys Val Val Tyr
 50 55 60
 His Asp Val Asp Val Arg Arg Arg Leu Pro Ile Thr Leu Gln Asp Met

65					70					75				80
Phe	Leu	Val	Pro	Glu	Glu	Phe	Asp	Leu	Pro	Pro	Val	Ser	Leu	Ile
				85					90					95
Tyr	Ile	Glu	Leu	Asn	Ser	Pro	Phe	Tyr	Pro	Arg	Phe	Ser	Lys	Glu
			100					105					110	
Met	Val	Lys	Tyr	Leu	His	Tyr	Phe	Glu	Met	Asp	Ile	Asn	Ile	Asp
		115					120				125			
Gly	Ala	Leu	Ser	Met	Gly	Gln	Lys	Lys	Lys	Val	Phe	Met	Ser	Phe
	130					135				140				
Leu	Ala	Thr	Asn	Thr	Ser	Leu	Leu	Leu	Met	Asp	Glu	Pro	Thr	Asn
145					150					155				160
Leu	Asp	Ile	Pro	Gly	Lys	Ser	Gln	Phe	Arg	Lys	Phe	Ile	Ala	Ser
			165					170						175
Met	Thr	Asp	Asp	Lys	Thr	Ile	Leu	Ile	Ser	Thr	His	Gln	Val	Arg
		180					185					190		
Ile	Asp	Lys	Val	Leu	Asp	His	Val	Leu	Ile	Met	Asp	Asn	Ser	Arg
	195					200						205		
Leu	Leu	Asn	Glu	Ser	Thr	Met	Ser	Ile	Cys	Asp	Lys	Leu	Phe	Phe
	210				215						220			
Glu	Ser	Glu	Asn	Arg	Glu	Leu	Leu	Gln	Ser	Ser	Leu	Phe	Ser	Thr
225				230						235				240
Ser	Ile	Gln	Gly	Asn	Phe	Leu	Leu	Leu	Pro	Asn	Glu	Ser	Gly	Glu
			245					250					255	
Ser	Glu	Ile	Asn	Leu	Glu	Leu	Leu	Phe	Asn	Ala	Thr	Leu	Ala	Val
		260						265					270	
Glu	Arg	Ile	Ser	Ala	Leu	Phe	His	Ser	Lys	Gln	Ile	Glu	Leu	
	275					280						285		

<210> 8199

<211> 653

<212> PRT

<213> B.fragilis

<400> 8199

Lys	Glu	Val	Ile	Ser	Val	Glu	Gly	Leu	Thr	Val	Glu	Phe	Asn	Ala	Thr
1				5				10					15		
Pro	Leu	Phe	Glu	Asp	Val	Ser	Tyr	Val	Ile	Asn	Lys	Lys	Asp	Arg	Ile
		20						25					30		
Ala	Leu	Val	Gly	Lys	Asn	Gly	Ala	Gly	Lys	Ser	Thr	Met	Leu	Lys	Ile
		35				40						45			
Leu	Ala	Gly	Leu	Gln	Ser	Pro	Thr	Arg	Gly	Val	Ile	Ala	Ile	Pro	Arg
	50				55					60					
Asp	Val	Thr	Ile	Gly	Tyr	Leu	Pro	Gln	Val	Met	Ile	Leu	Ala	Asp	Asn
65				70					75					80	
His	Thr	Val	Met	Glu	Glu	Ala	Glu	Leu	Ala	Phe	Glu	His	Ile	Phe	Glu
			85					90					95		
Leu	Gln	Ala	Asp	Leu	Glu	Arg	Met	Asn	Gln	Glu	Leu	Ala	Asp	Arg	Thr
		100					105						110		
Asp	Tyr	Asp	Ser	Glu	Glu	Tyr	His	Lys	Leu	Ile	Asp	Arg	Phe	Thr	His
	115					120						125			
Glu	Asn	Asp	Arg	Phe	Leu	Met	Met	Gly	Gly	Thr	Asn	Phe	His	Ala	Glu
	130					135				140					
Ile	Glu	Arg	Thr	Leu	Ile	Gly	Leu	Gly	Phe	Ser	Arg	Glu	Asp	Phe	Asn
145				150					155					160	
Arg	Pro	Thr	Ser	Glu	Phe	Ser	Gly	Gly	Trp	Arg	Met	Arg	Ile	Glu	Leu
			165					170						175	
Ala	Lys	Leu	Leu	Arg	Lys	Pro	Asp	Val	Leu	Leu	Leu	Leu	Asp	Glu	Pro
		180					185						190		
Thr	Asn	His	Leu	Asp	Ile	Glu	Ser	Ile	Gln	Trp	Leu	Glu	Thr	Phe	Leu

[illegible]

<211> 199
 <212> PRT
 <213> B.fragilis

<400> 8200

Pro Met Thr Val Ser Lys Thr Lys Ala Lys Leu Val Asp Val Ala Arg
 1 5 10 15
 Gln Leu Phe Ala Lys Met Gly Val Glu Asn Thr Thr Met Asn Asp Ile
 20 25 30
 Ala Leu Ala Ser Lys Lys Gly Arg Arg Thr Leu Tyr Thr Tyr Phe Lys
 35 40 45
 Ser Lys Asp Glu Ile Tyr Leu Ala Val Val Glu Ser Glu Leu Asp Ile
 50 55 60
 Leu Ser Asp Met Met Lys Arg Val Ala Asp Lys Asp Ile Ser Pro Asp
 65 70 75 80
 Lys Lys Ile Ile Glu Met Ile Tyr Thr Arg Leu Asp Ala Val Lys Glu
 85 90 95
 Val Val Tyr Arg Asn Gly Thr Leu Arg Ala Asn Phe Phe Arg Asp Ile
 100 105 110
 Trp Arg Val Glu Lys Val Arg Lys Arg Phe Asp Ala Lys Glu Met Gln
 115 120 125
 Leu Phe Lys Ser Val Leu Lys Glu Gly Gln Asp Lys Gly Val Phe His
 130 135 140
 Val Asp Asp Val Glu Met Thr Ala Ala Leu Val His Tyr Cys Val Lys
 145 150 155 160
 Gly Ile Glu Val Pro Tyr Ile Arg Gly His Ile Gly Ala Asn Leu Asp
 165 170 175
 Met Glu Thr Arg Lys Arg Tyr Val Ala Asn Ile Val Phe Gly Ala Leu
 180 185 190
 His Arg Thr Glu Ile Asn Gln
 195

<210> 8201
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 8201

Leu Leu Phe Leu Ser Arg Lys Ser Lys Arg Glu Phe Ile Asn Lys Asn
 1 5 10 15
 Arg Thr Met Arg Thr Ser Val Lys Phe Ile Leu Met Phe Val Leu Leu
 20 25 30
 Met Leu Ser Phe Ser Ile Ser Gly Asn Ala Leu Asn Ile Thr Glu Cys
 35 40 45
 Ser His Lys Ser Val Asn Ser Cys Gln Val Ser Ala Ser Ser Leu Asp
 50 55 60
 Thr Asn Tyr Ser Tyr Arg Tyr Gly Ser Asp Ile Thr Gly Phe Asp Lys
 65 70 75 80
 Ser Gln Thr Leu Ser Val Ser Asp Val Glu Leu Gly Phe Lys Pro Val
 85 90 95
 Ser Glu Thr Tyr Ser Ser Asn Asn Leu Arg Leu Arg Arg Ile Leu Glu
 100 105 110
 Asp Ser Asp Leu Phe Lys Asp Thr Met Arg Lys Trp Cys Leu Val Arg
 115 120 125
 Glu Asn Leu Leu Val Leu Asp Gln Ser Lys Ser Tyr Tyr Ser Asp Lys
 130 135 140
 Asp Pro His Tyr Ala Ser Ile Ser Cys His Tyr Tyr Ile Phe Ala Leu
 145 150 155 160
 Arg Arg Ile Leu Ile

<210> 8202
 <211> 1518
 <212> PRT
 <213> B.fragilis

<400> 8202

Glu	Thr	Ser	Phe	Met	Lys	Arg	Lys	Trp	Ile	Lys	Trp	Val	Ser	Trp	Ile
1				5					10					15	
Leu	Leu	Thr	Pro	Leu	Ile	Leu	Phe	Val	Ile	Leu	Met	Val	Leu	Leu	Tyr
			20					25					30		
Ile	Pro	Pro	Val	Gln	Asn	Phe	Leu	Arg	Lys	Glu	Ala	Ala	Ala	Tyr	Ala
		35				40					45				
Ser	Glu	Ala	Thr	Gly	Met	Gln	Ile	Asn	Val	Arg	Arg	Ile	Asp	Leu	Arg
	50					55				60					
Phe	Pro	Leu	Asn	Leu	Leu	Val	Arg	Gly	Val	Glu	Val	Ile	Gln	Ala	Pro
65					70					75					80
Asp	Thr	Leu	Leu	Ser	Leu	Glu	Ser	Leu	Asn	Val	His	Val	Gln	Ala	Leu
				85					90					95	
Pro	Leu	Phe	Arg	Gly	Lys	Val	Glu	Val	Asp	Asp	Ile	Ser	Leu	Gln	Gln
			100					105						110	
Val	Ala	Val	Asn	Ser	Ala	Asn	Leu	Ile	Asp	Gly	Met	Arg	Leu	Lys	Gly
			115					120					125		
Val	Leu	Gly	Ser	Phe	Arg	Leu	Glu	Ser	His	Gly	Val	Asp	Leu	Pro	Asn
			130					135				140			
Glu	Ile	Ala	Ile	Ile	Asn	Arg	Ala	Glu	Leu	Ser	Asp	Thr	His	Val	Gln
145					150					155					160
Leu	Leu	Leu	Asn	Asp	Thr	Thr	Ala	Thr	Pro	Lys	Asp	Thr	Ala	Gln	Ser
				165					170					175	
Glu	Val	Arg	Trp	Lys	Val	Asp	Leu	Arg	His	Leu	Lys	Leu	Lys	Asn	Val
			180					185						190	
Ser	Phe	Ser	Met	Gln	Leu	Pro	Ala	Asp	Ser	Met	Arg	Leu	Ala	Ala	His
		195					200					205			
Val	Gly	Glu	Ala	Gln	Val	Asn	Asp	Ala	Glu	Ala	Asp	Leu	Lys	Asn	Leu
		210				215					220				
His	Tyr	Gly	Leu	Arg	Ser	Phe	Leu	Val	Ser	Gly	Thr	Ser	Val	Asn	Tyr
225					230					235					240
Asp	Val	Gly	Thr	Ala	Glu	Pro	Ala	Glu	Gly	Phe	Asp	Pro	Ser	His	Ile
				245					250					255	
Ala	Leu	Arg	Asp	Ile	Arg	Ile	Gly	Leu	Asp	Ser	Met	Tyr	Tyr	Arg	Gly
			260					265						270	
Arg	Asn	Met	Asn	Ala	Val	Ile	Arg	Glu	Phe	Ser	Met	Asn	Asp	Arg	Ser
		275					280					285			
Gly	Leu	Ser	Val	Asn	Ser	Leu	Thr	Gly	Arg	Val	Phe	Ala	Asn	Asp	Thr
		290				295					300				
Ile	Ile	Gln	Val	Pro	Ser	Leu	Lys	Leu	Leu	Thr	Pro	His	Ser	Glu	Met
305					310					315					320
Asp	Leu	Thr	Ala	Gln	Thr	Tyr	Trp	Glu	Leu	Val	Asn	Ile	Pro	Thr	Thr
				325					330					335	
Gly	Arg	Leu	Thr	Ala	Arg	Phe	Asn	Ala	Met	Ile	Gly	Lys	Gln	Asp	Val
			340					345					350		
Leu	Leu	Leu	Ala	Gly	Gly	Leu	Pro	Asp	Ser	Phe	Lys	Glu	Ala	Tyr	Pro
		355					360					365			
Phe	Arg	Pro	Leu	Val	Ile	Arg	Ala	Gly	Thr	Glu	Gly	Asn	Leu	Lys	Glu
		370				375					380				
Met	Gln	Ile	Thr	Arg	Phe	Ser	Ala	Glu	Leu	Pro	Gly	Ala	Phe	Ser	Leu
385					390					395					400
Ser	Gly	Gly	Gly	Glu	Leu	Leu	Asn	Leu	Thr	Asp	Ser	Leu	Glu	Arg	Ser

	405		410		415
Ala Ile Ile Asp	Leu Arg Met Gln Thr	Gln Asn Leu Asn Phe Leu Thr			
	420		425		430
Ala Leu Gly Gly	Thr Arg Pro Asp Ser	Leu Leu Val Ile Pro Asn Gln			
	435		440		445
Met Ser Leu Val	Ala Lys Ala Arg Met	Lys Gly Pro Gln Tyr Met Ala			
	450		455		460
Gln Leu Leu Leu	Lys Glu Gly Glu Gly Met	Leu Asn Leu Asp Ala Ala			
	465		470		475
Tyr Asn Gly Ser	Thr Glu Ala Tyr Arg	Ala Asp Leu Lys Val Asp Ala			
	485		490		495
Leu Gln Leu Tyr	His Phe Leu Pro Lys	Asp Ser Ile Tyr Glu Leu Thr			
	500		505		510
Thr Ser Val Ala	Ala Val Gly Arg Gly	Ile Asp Phe Thr Ser Tyr Arg			
	515		520		525
Thr Thr Ala Ser	Leu Lys Ala Ser	Leu Gln Ser Leu His Tyr Gly Arg			
	530		535		540
Tyr Gln Ile Ser	Gly Ile Glu Val Thr	Gly Asp Val Lys Asn Ala Leu			
	545		550		555
Ala Thr Ala Arg	Leu Val Ser Asp	Asn Arg Leu Leu Lys Met Asn Ala			
	565		570		575
Asn Ala Glu Tyr	His Leu Ala Lys Pro	Tyr Met Asp Gly Lys Leu Asp			
	580		585		590
Met Asp Val Thr	Gln Leu Asp Leu Tyr	Glu Leu Gly Ile Ala Pro Lys			
	595		600		605
Pro Leu Lys Tyr	Pro Leu Ala Phe	Asn Phe Thr Ala Glu Ala Arg Arg			
	610		615		620
Asp Arg Ile Phe	Thr His Leu Thr	Ala Gly Asp Met Lys Leu Asn Leu			
	625		630		635
Ser Ala Arg Ser	Ser Leu Asp Lys Leu	Ile Lys Gln Ser Ala His Phe			
	645		650		655
Ala Asp Val Leu	Val Lys Gln Ile Asp	Lys Lys Glu Leu Asp His Gly			
	660		665		670
Glu Leu Arg Glu	Ala Leu Pro Thr	Ala Ile Phe Ser Met Ser Ala Gly			
	675		680		685
Lys Glu Asn Pro	Leu Ala Tyr Tyr	Leu Ala Thr Lys Asp Ile Ala Phe			
	690		695		700
His Asp Val Gly	Val Lys Phe Gly Thr	Ala Pro Asp Trp Gly Ile Asn			
	705		710		715
Gly Lys Ala Ser	Ile His Ala Leu Lys	Met Asp Thr Leu Gln Leu Asp			
	725		730		735
Thr Ile Tyr Phe	Thr Val Lys Gln Asp	Thr Thr Arg Met Ser Leu His			
	740		745		750
Gly Gly Val Ile	Asn Gly Pro Lys	Asn Pro Gln Ile Val Phe Lys Ser			
	755		760		765
Ser Phe Ala Gly	Glu Ile Arg Asn Asp	Asp Ala Glu Leu Thr Leu Arg			
	770		775		780
Tyr Glu Asn Ala	Lys Gly Glu Thr Gly	Val Leu Phe Gly Val Asn Val			
	785		790		795
Arg Pro Leu Val	Glu Gly Asn Gly Lys	Gly Asp Gly Leu Ala Phe Thr			
	805		810		815
Leu Ile Pro Glu	Asn Pro Ile Ile	Ala Phe Arg Lys Phe His Phe Val			
	820		825		830
Asp His His Asn	Trp Ile Tyr Leu	His Lys Asn Met Arg Leu Tyr Ala			
	835		840		845
Asn Val Asp Met	Ala Asp Asp Glu	Asp Met Gly Phe Arg Ile Lys Ser			
	850		855		860
Asn Arg Ser Asp	Thr Val Ser Leu	Gln Asn Ile Asp Val Glu Leu Gln			
	865		870		875
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Arg Ile Arg Leu Ser Glu Ile Ser Glu Val Leu Pro Tyr Leu Pro Asp
 885 890 895
 Leu Ser Gly Leu Phe Ser Ala Glu Ala Asn Tyr Val Gln Thr Ala Thr
 900 905 910
 Ser Leu Gln Val Ser Ala Glu Ala Asn Ile Asp Glu Leu Thr Tyr Glu
 915 920 925
 Arg Gln Arg Ile Gly Asp Val Ala Leu Gly Val Thr Trp Leu Pro Gly
 930 935 940
 Glu Arg Gly Lys His Tyr Ile Ser Thr Tyr Leu Thr His Glu Gly Glu
 945 950 955 960
 Glu Ile Leu Met Ala Asp Gly Ser Leu His Pro Ser Val Thr Gly Lys
 965 970 975
 Asp Ser Ile Glu Val Asn Ala Ile Met Glu His Phe Pro Leu Lys Ile
 980 985 990
 Ala Asn Ala Phe Val Pro Asp Gln Val Val Thr Leu Ser Gly Asp Met
 995 1000 1005
 Asp Gly Gly Leu His Ile Thr Gly Asp Thr Asp Arg Pro Leu Val Asn
 1010 1015 1020
 Gly Asp Leu Val Leu Asp Ser Val Ser Val Phe Ala Arg Gln Ala Gly
 1025 1030 1035 1040
 Ala Arg Phe Thr Phe Asp Asn Arg Pro Val Gln Ile Lys Asn Ser Arg
 1045 1050 1055
 Leu Thr Phe Asp Lys Phe Ala Ile Phe Thr Thr Gly Lys Asn Pro Phe
 1060 1065 1070
 Thr Ile Asp Gly Thr Val Asp Phe Arg Asn Leu Thr Asp Pro Arg Val
 1075 1080 1085
 Asn Leu Ser Met Leu Ala Glu Asn Tyr Met Leu Leu Asn Ala Pro Arg
 1090 1095 1100
 Thr Lys Glu Ser Leu Val Tyr Gly Lys Val Phe Val Asp Phe Asn Ala
 1105 1110 1115 1120
 Thr Val Arg Gly Pro Ile Asn Ala Leu Val Met Arg Gly Asn Met Asn
 1125 1130 1135
 Leu Leu Gly Asn Thr Asp Val Thr Tyr Val Leu Met Asp Ser Pro Leu
 1140 1145 1150
 Thr Val Gln Asp Arg Leu Gly Asp Leu Val Thr Phe Thr Ser Phe Ser
 1155 1160 1165
 Asp Thr Thr Thr Val Gln Lys Glu Glu Ala Pro Val Val Ser Leu Gly
 1170 1175 1180
 Gly Leu Asp Met Ile Met Thr Val Gln Ile Asp Pro Gly Val Arg Leu
 1185 1190 1195 1200
 Lys Ala Asp Leu Ser Ala Asp Arg Ser Ser Arg Val Glu Leu Gln Gly
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 Gly Gly Asn Leu Ser Met Gln Tyr Thr Pro Gln Gly Asp Leu Ser Leu
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 Ser Gly Arg Tyr Thr Leu Thr Gly Gly Met Met Lys Tyr Ala Leu Pro
 1235 1240 1245
 Val Ile Pro Leu Lys Glu Phe Asn Ile Asn Asn Gly Ser Tyr Val Glu
 1250 1255 1260
 Trp Thr Gly Asn Pro Met Asp Pro Met Leu Asn Leu Lys Ala Thr Glu
 1265 1270 1275 1280
 Arg Leu Arg Ala Ser Val Gly Ser Glu Asn Gly Gln Ser Arg Met Val
 1285 1290 1295
 Asn Phe Asp Val Ser Ile Val Val Lys Asn Arg Leu Asp Asn Leu Ser
 1300 1305 1310
 Leu Ala Phe Glu Ile Asp Ala Pro Asp Asp Ala Glu Val Gln Asn Gln
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 Leu Ala Ser Met Ser Ala Asp Glu Arg Gly Lys Gln Ala Ile Ala Met
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 Leu Ala Thr Gly Leu Tyr Leu Ala Asn Ser Gly Ser Ser Gly Gly Gly

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1345 1350 1355 1360
 Gly Leu Asn Met Gly Ser Ala Leu Asn Ser Ile Leu Ser Ser Gln Ile
 1365 1370 1375
 Asn Ala Leu Ala Gly Asn Leu Lys Asn Ala Ser Phe Ser Met Gly Val
 1380 1385 1390
 Glu Asp His Asp Ala Ala Asp Ala Gly Gly Lys Arg Thr Asp Tyr Ser
 1395 1400 1405
 Phe Arg Tyr Ser Gln Arg Phe Phe Asn Asp Arg Phe Gln Ile Val Leu
 1410 1415 1420
 Gly Gly Lys Val Ser Thr Gly Ala Gln Ala Thr Asn Asp Val Glu Ser
 1425 1430 1435 1440
 Phe Ile Asp Asn Ile Ser Leu Glu Tyr Arg Leu Asp Thr Ser Gly Thr
 1445 1450 1455
 Arg Tyr Ile Arg Leu Phe His Asn Lys Asn Tyr Glu Ser Val Leu Glu
 1460 1465 1470
 Gly Glu Ile Thr Glu Thr Gly Ile Gly Leu Val Leu Arg Lys Arg Ile
 1475 1480 1485
 Asp Arg Leu Gly Glu Leu Phe Ile Phe Arg Lys Lys Lys Lys Thr Leu
 1490 1495 1500
 Pro Glu Thr Gln Lys Ala Pro Ser Asp Gly Glu Ala His Gln
 1505 1510 1515

<210> 8203

<211> 76

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (20), (25)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8203

Arg Ser Phe Phe Thr Tyr Leu Tyr Tyr Lys Tyr Leu Thr Val Leu Lys
 1 5 10 15
 Phe Asp Leu Xaa Leu Thr Gly Leu Xaa Ile Ile Phe Ser Lys Glu Pro
 20 25 30
 Leu Leu Phe Lys Ile Leu Ala Pro Phe Gln Lys Ala Gly Ala Lys Gly
 35 40 45
 Lys Gly Val Asn Phe Lys Pro Ala Lys Val Phe Gly Lys Phe Phe Phe
 50 55 60
 Lys Val Pro Gly Phe Asn Phe Gln Ala Leu Leu Gly
 65 70 75

<210> 8204

<211> 301

<212> PRT

<213> B.fragilis

<400> 8204

Ala Thr Lys Val Arg Gly Phe Glu Val Lys Ser Tyr Ile Cys Arg Leu
 1 5 10 15
 Lys Leu Asn Lys Ser Val Met Lys Gln Asn Phe Trp Ile Leu Leu Ile
 20 25 30
 Ile Leu Ala Cys Ser Ala Val Ala Cys Lys Ser Gly Gln Lys Lys Asp
 35 40 45
 Gly Asn Met Glu Lys Glu Thr Val Leu Lys Ile Glu Thr Ser Met Gly
 50 55 60
 Asp Ile Lys Val Lys Leu Tyr Asn Glu Thr Pro Lys His Arg Asp Asn

65 70 75 80
 Phe Ile Lys Leu Ala Lys Asp Gly Thr Tyr Asn Gly Thr Leu Phe His
 85 90 95
 Arg Val Ile Lys Asp Phe Met Val Gln Ala Gly Asp Pro Glu Ser Lys
 100 105 110
 Asn Ala Pro Lys Gly Lys Met Leu Gly Ser Gly Asp Val Gly Tyr Thr
 115 120 125
 Val Pro Ala Glu Phe Val Tyr Pro Lys Tyr Phe His Lys Lys Gly Ala
 130 135 140
 Leu Ser Ala Ala Arg Gln Gly Asp Glu Val Asn Pro Lys Lys Glu Ser
 145 150 155 160
 Ser Gly Cys Gln Phe Tyr Ile Val Thr Gly Lys Val Phe Asn Asp Ser
 165 170 175
 Thr Leu Leu Asn Met Glu Gln Gln Lys Asn Gln Asn Lys Val Thr Glu
 180 185 190
 Ala Phe Asn Ala Leu Ala Gln Lys His Met Lys Glu Ile Tyr Lys Met
 195 200 205
 Arg Lys Ala Asn Asp Gln Asp Gly Leu Tyr Ala Leu Gln Asp Thr Leu
 210 215 220
 Phe Ile Gln Ala Glu Ala Glu Ala Ala Lys Gln Pro Asp Phe His Phe
 225 230 235 240
 Thr Pro Glu Gln Ile Lys Ala Tyr Thr Thr Val Gly Gly Thr Pro His
 245 250 255
 Leu Asp Gly Glu Tyr Thr Val Phe Gly Glu Val Val Glu Gly Met Asp
 260 265 270
 Ile Val Asp Lys Ile Gln Gln Val Lys Thr Asp Arg Ser Asp Arg Pro
 275 280 285
 Glu Glu Asp Val Lys Ile Ile Asn Val Ser Val Ile Glu
 290 295 300

<210> 8205

<211> 128

<212> PRT

<213> B.fragilis

<400> 8205

Thr Leu Ser Leu Lys His Ser Gln Ser Val Phe Val Leu Thr Lys Arg
 1 5 10 15
 Phe Phe Leu Leu Tyr Lys Arg Leu Ile Lys Leu Lys Lys Ser Ile Leu
 20 25 30
 Glu Lys Val Leu Leu Thr Ser Pro Pro Ile Lys Gln Ile Ile Gln Ser
 35 40 45
 Ser Glu Thr Ser Tyr Ile Lys Pro Ile His Ser Leu Glu Ser Pro Leu
 50 55 60
 Leu Gln Gly Ser Val Pro Pro Arg Asp Ala Glu Ile Pro Thr Ser Ser
 65 70 75 80
 Asn Asn Arg Tyr Ile Gly Gln Glu Lys Ala Ile Gly Phe Pro Ile Ala
 85 90 95
 Ile Ser Ile Lys Lys Val Leu Ser Gly Gly Ala Leu Pro Phe Leu Arg
 100 105 110
 Pro Leu Tyr Lys Thr Ser His Pro Leu Arg Ser Phe Asp Arg Arg Gly
 115 120 125

<210> 8206

<211> 333

<212> PRT

<213> B.fragilis

<400> 8206

Glu Asn Ser Ser Tyr Phe Val Leu His Ser Ser Phe Tyr Phe Val Leu
 1 5 10 15
 Leu Gln Arg Tyr Leu Met Arg His Ile Thr Asn Leu Leu Ile Phe Thr
 20 25 30
 Val Met Lys Pro Thr Leu Phe Val Leu Ala Ala Gly Met Gly Ser Arg
 35 40 45
 Tyr Gly Gly Leu Lys Gln Leu Asp Gly Leu Gly Pro Asn Gly Glu Thr
 50 55 60
 Ile Met Asp Tyr Ser Ile Tyr Asp Ala Ile Arg Gly Gly Phe Gly Lys
 65 70 75 80
 Val Val Phe Val Ile Arg Lys Asp Phe Glu Gln Asp Phe Arg Glu Lys
 85 90 95
 Ile Leu Ser Lys Tyr Glu Asn His Ile Pro Val Glu Leu Val Phe Gln
 100 105 110
 Ala Leu Asp Asn Leu Pro Glu Gly Phe Thr Cys Pro Ala Asp Arg Val
 115 120 125
 Lys Pro Trp Gly Thr Asn His Ala Val Leu Met Gly Lys Asp Val Ile
 130 135 140
 Lys Glu Pro Phe Ala Val Ile Asn Ala Asp Asp Phe Tyr Gly Arg Asp
 145 150 155 160
 Ser Phe Ala Val Leu Gly Ala Glu Leu Ser Gln Met Asp Gly Lys Lys
 165 170 175
 Asn Asp Tyr Cys Met Val Gly Tyr Arg Val Gly Asn Thr Leu Ser Glu
 180 185 190
 Ser Gly Ser Val Ala Arg Gly Val Cys Glu Thr Asn Ala Glu Gly Tyr
 195 200 205
 Leu Thr Thr Val Val Glu Arg Thr Ala Ile Glu Arg Ile Asp Gly Lys
 210 215 220
 Val Ser Phe Lys Asp Glu Asn Gly Glu Met Gln Thr Ile Gly Asp Asn
 225 230 235 240
 Thr Pro Val Ser Met Asn Met Trp Gly Phe Thr Pro Asp Tyr Phe Ala
 245 250 255
 Tyr Ser Glu Glu Tyr Phe Lys Glu Phe Leu Lys Glu Asn Glu Gly Asn
 260 265 270
 Leu Lys Ser Glu Tyr Phe Ile Pro Leu Met Val Asn Lys Leu Val Asn
 275 280 285
 Glu Gly Thr Ala Arg Val Lys Val Leu Asp Thr Thr Ser Lys Trp Phe
 290 295 300
 Gly Val Thr Tyr Ala Ala Asp Arg Gln Gly Val Val Asp Lys Ile Gln
 305 310 315 320
 Ala Leu Val Asp Ala Gly Glu Tyr Pro Asp Lys Leu Phe
 325 330

<210> 8207

<211> 256

<212> PRT

<213> B.fragilis

<400> 8207

Gln Ile Met Lys Thr Glu Leu Lys Gly Trp Leu Ala Asp Asn Thr Val
 1 5 10 15
 Thr Thr Asp Asn Lys Glu Asp Lys Ile Leu Val Leu Glu Ser Ala Gly
 20 25 30
 Asn Leu Thr Leu Ser Asp Val Leu Asp Glu Met Lys Lys Glu Asp Thr
 35 40 45
 Gly Leu Arg Ala Glu Thr Leu Lys His Ala Val Asp Leu Phe Gln Arg
 50 55 60
 Thr Val Ser Glu Leu Val Leu Asn Gly Tyr Ser Val Asn Thr Gly Leu
 65 70 75 80

Phe Arg Ala Val Pro Gln Phe Arg Gly Val Ile Asp Gly Gly Val Trp
 85 90 95
 Asn Ser Glu Lys Asn Ser Ile Tyr Val Ser Phe Asn Gln Asp Lys Asp
 100 105 110
 Leu Arg Glu Thr Ile Ala Arg Thr Gly Val Lys Ile Leu Gly Ala Lys
 115 120 125
 Gly Asp Ser Ala Tyr Phe Ile Gly Gly Glu Asp Ala Ala Thr Arg Ala
 130 135 140
 Thr Asp Gly Ser Ala Thr Ala Gly Arg Asn Tyr Arg Leu Gln Gly Lys
 145 150 155 160
 Asn Ile Lys Val Thr Gly Thr Asp Pro Ala Val Gly Ile Val Leu Ile
 165 170 175
 Asp Glu Lys Gly Thr Glu Thr Lys Leu Pro Met Asp Met Ile Ala Val
 180 185 190
 Asn Asn Pro Ser Glu Val Leu Val Leu Leu Pro Ala Asp Leu Lys Asp
 195 200 205
 Gly Ile Tyr Glu Leu Arg Leu Thr Thr Gln Tyr Cys His Ser Ser Gln
 210 215 220
 Thr Met Leu Lys Thr Pro Arg Thr Val Ser Arg Phe Ile Asn Ile Gly
 225 230 235 240
 Ala Ser Gln Gly Ser Gly Asp Asp Asp Ile Val Asp Asp Pro Thr Ala
 245 250 255

<210> 8208

<211> 726

<212> PRT

<213> B.fragilis

<400> 8208

Arg Leu Lys Trp His Tyr Asn Ser Ala Tyr Asp Ala Val Asn Arg Leu
 1 5 10 15
 Ala Thr Phe Ala Asp Ile Asp Leu Val Tyr Ala His Asn Asp Val Met
 20 25 30
 Ala Leu Ala Ala Arg Asp Val Ile Met Lys Arg Asp Ser Val Ser Gly
 35 40 45
 Lys Arg Ile Arg Phe Ile Gly Ile Asp Gly Val Tyr Gly Asp Gly Ala
 50 55 60
 Gly Leu Gln Ala Val Ala Asp Glu Lys Leu Glu Ala Ser Phe Gln Tyr
 65 70 75 80
 Pro Thr Gly Gly Ala Ile Ser Ile Gln Val Ala Met Gln Ile Ile Asn
 85 90 95
 Gly Glu Lys Val Lys Lys Asn Tyr Val Leu Asn Thr Ala Ile Ile Asn
 100 105 110
 Arg Gly Asn Ala Lys Thr Ile Leu Ala Gln Ser Glu Gln Leu Asn His
 115 120 125
 Tyr Gln Lys Arg Ile Asn Arg Gln Lys Gln Glu Glu Asp Asn Leu Leu
 130 135 140
 Ser Arg Phe Lys Phe Leu Arg Asn Ser Thr Ile Leu Ile Leu Ala Leu
 145 150 155 160
 Met Leu Leu Ile Ile Pro Leu Leu Gly Tyr Val Met Tyr Met Asn Leu
 165 170 175
 Arg Val Lys Asn Lys Asn Lys Glu Leu His Asp Lys Asn Gln Leu Val
 180 185 190
 Glu Ala Gln Lys Glu Glu Leu Ala Val Lys Asn Ser Gln Ile Glu Asn
 195 200 205
 Ile Ser Asn Gln Lys Leu Gln Phe Phe Thr Asn Ile Ser His Glu Ile
 210 215 220
 Arg Thr Pro Leu Thr Leu Ile Leu Gly Pro Val Asn Lys Leu Ile Lys
 225 230 235 240

Asn Ser Lys Leu Asp Pro Ser Ile Gln Glu Asp Val Ala Leu Met Lys
 245 250 255
 Arg Asn Val Asp Arg Leu Tyr Arg Ile Val Asn Gln Ile Leu Asp Phe
 260 265 270
 Arg Arg Ile Asp Asn Asp Lys Met Lys Leu Ile Leu Arg Gln Val Asp
 275 280 285
 Leu Ile Gly Met Val Arg Glu Val Phe Asp Tyr Phe Thr Gly Ile Ala
 290 295 300
 Glu Glu Lys Gln Ile His Tyr Arg Phe Ser Thr Asn Ile Asp Glu Leu
 305 310 315 320
 Asn Ile Tyr Ile Asp Val Asn Lys Ile Glu Gln Val Leu Val Asn Ile
 325 330 335
 Ile Ser Asn Ala Phe Lys Tyr Ser Asp Ser Gly Gly Asp Ile Ser Val
 340 345 350
 Arg Ile Thr Gly Glu Ala Glu Thr Val Leu Leu Glu Val Glu Asp His
 355 360 365
 Gly Arg Gly Ile Ser Lys Glu Ser Met Glu His Leu Phe Glu Arg Phe
 370 375 380
 Tyr Thr Gly Asn Lys Thr Phe Gly Thr Val Gly Phe Gly Ile Gly Leu
 385 390 395 400
 Asn Leu Ser Lys Glu Tyr Val Asp Leu His Asp Gly Glu Ile Arg Ala
 405 410 415
 Glu Ser Gln Pro Gly Glu Tyr Thr Leu Phe Ser Val Arg Leu Tyr Lys
 420 425 430
 Asp Ile Ala His Tyr Thr His Glu Tyr Ile Leu Glu Glu Thr Asp Arg
 435 440 445
 Phe Asn Leu Ser Tyr His Asp Met Glu Val Asp Thr Thr Val Val Asn
 450 455 460
 Glu Met Leu Ser Lys Thr Tyr Asp Tyr His Val Leu Val Val Glu Asp
 465 470 475 480
 Asp Pro Asp Val Arg Tyr Ser Leu Arg Lys Glu Leu Ser Ala Asn Phe
 485 490 495
 Gln Val Glu Val Ala Gly Asn Gly Asn Glu Ala Leu Asp Leu Leu Gly
 500 505 510
 Gln Gly Asp Ala Phe His Leu Ile Leu Ser Asp Val Leu Met Pro Gly
 515 520 525
 Met Asn Gly Phe Gln Leu Val Asn Arg Val Lys Asn Asp Leu Ala Phe
 530 535 540
 Ser His Ile Pro Ile Ile Leu Leu Thr Ala Leu Ser Glu Asp Ser Gln
 545 550 555 560
 Arg Ile Tyr Gly Ile Ala Glu Gly Ala Asp Glu Tyr Ile Pro Lys Pro
 565 570 575
 Phe Asn Ile Asp Phe Leu Lys Ile Arg Ile Ile Asn Met Ile Ser Glu
 580 585 590
 Arg Gln Lys Met Lys Glu Ala Tyr Met Lys Asn Leu Arg Ala Gly Thr
 595 600 605
 Met Asp Asn Val Glu Val Cys Lys Leu Met Lys Val Asp Glu Leu Phe
 610 615 620
 Arg Asp Lys Leu Leu Ser Ile Val Asp Thr Gln Tyr Glu Asn Ser Asp
 625 630 635 640
 Phe Ser Ile Glu Asp Leu Ser Glu His Leu Gly Leu Ser Arg Val His
 645 650 655
 Leu Tyr Arg Lys Met Lys Thr Leu Phe Gly Val Ser Pro Thr Asp Tyr
 660 665 670
 Leu Arg Asn Tyr Arg Leu Asn Lys Ala Met Leu Leu Leu Lys Ala Arg
 675 680 685
 Gln Tyr Asn Ile Ser Glu Ile Ala Tyr Met Thr Gly Phe Thr Ser Pro
 690 695 700
 Ala Tyr Phe Thr Lys Cys Phe Arg Thr Leu Tyr Gly Val Thr Pro Thr

705
Glu Ala Met Val Ala Asn
725

715

720

<210> 8209
<211> 536
<212> PRT
<213> B.fragilis

<400> 8209

Tyr Met Asn Arg Thr Phe Ile Met Arg Glu Cys Leu Gly Lys Ala Leu
1 5 10 15
Trp Leu Cys Phe Cys Leu Ser Ile Ala Gly Cys Ala Glu Asp Asp Arg
20 25 30
Met Thr Pro Leu Ser Ala Asp Ser Gly Asp Thr Ala Asp Glu Leu Ile
35 40 45
Pro Ile His Ile Ser Leu Thr Gly Asp Asn Asp Tyr His Ser Ser Ser
50 55 60
Phe Asn Asn Ala Ser Thr Arg Ser His Ser Pro Leu Ile Ala Glu Trp
65 70 75 80
Val Gly Val Lys Ala Phe Ser Pro Thr Arg Thr Gly Glu Gln Pro Asp
85 90 95
Tyr Asp Gly Pro Arg Ile Ala Ser Met Glu Leu Thr Glu Asp Thr Leu
100 105 110
Pro Arg Val Ser Thr Arg Ala Thr Val Pro Ala Gly Val Tyr Phe Arg
115 120 125
Leu Ile Val Phe Arg Lys Ser Gly Asn Asn Tyr Val Phe Gln Ser Val
130 135 140
Ala Asp Tyr Ala Ser Asn Gly Thr Gly Thr Pro Val Leu Lys Gln Gly
145 150 155 160
Lys Leu Leu Thr Arg Ser Gly Thr Ile Arg Met Val Gly Tyr Ser Phe
165 170 175
Asn Thr Ala Thr Ala Ala Asp Leu Gly Thr Met Leu Ser Thr Tyr Ala
180 185 190
Tyr Asn Ser Ser Thr Val Ser Ile Pro Asn Met Ser Lys Asp Phe Met
195 200 205
Thr Phe Asp Ser Gly Asp Ile Thr Asn Val Asn Ser Leu Ser His Asn
210 215 220
Leu Pro Val Ser Phe Asn Gln Lys Leu Cys Lys Leu Thr Ile Thr Ile
225 230 235 240
Ser Pro Thr Gly Phe Pro Ser Asn Thr Ile Thr Asn Cys Thr Gly Val
245 250 255
Tyr Val Lys Gln Gly Gly Asn Ser Thr Ser Trp Lys Ile Gly Pro Ser
260 265 270
Thr Asn Val Val Ala Thr Asn Thr Asn Asn Thr Ala Ala Phe Ser Pro
275 280 285
Ser Thr Ala Leu Ser Thr Thr Ile Arg Met Val Pro Phe Ala Gly Ala
290 295 300
Arg Thr Ile Thr Val His Phe Asn Thr Leu Thr Val Gly Gly Arg Ile
305 310 315 320
Val Asn Asn Asn Thr Glu Ile Thr Ser Thr Gln Ser Val Gln Leu Lys
325 330 335
Glu Gly Lys Ser Tyr Thr Leu Lys Ile Gln Phe Lys Lys Gly Pro Gly
340 345 350
Ile Asn Val Leu Glu Ser Asp Ile Asn Leu Thr Gly Asn Gly Cys Thr
355 360 365
Ala Gln Asp Lys Lys Asp Leu Ala Lys Leu Ile Trp Ala Asp Gly Asn
370 375 380
Leu Lys Ser Thr Gly Asn Ser Asn Tyr Val Trp Thr Thr Ser Thr Asp

385 390 395 400
 Arg Gly Tyr Tyr Tyr Thr Trp Tyr Ser Thr Tyr Thr Gly Asn Thr Ser
 405 410 415
 Gln Asn Asn Thr Asp Pro Cys Ser Lys Leu Asn Val Ser Thr Tyr Gly
 420 425 430
 Thr Gly Trp Arg Thr Pro Ser Arg Asn Glu Leu Thr Lys Leu Ser Arg
 435 440 445
 Cys Thr Asn Lys Ala Lys Val Asn Asn Gly Met Trp Phe Met Asn Ser
 450 455 460
 Ser Lys Gly Leu Phe Leu Pro Leu Ala Gly His Thr Pro Ser Ala Ser
 465 470 475 480
 Gly Ala Ser Thr Gly Gly Asn Ala Val Val Asn Gly Asn Arg Asp Gly
 485 490 495
 Asn Tyr Trp Cys Thr Glu Lys Tyr Tyr Arg Phe Leu Phe Gly Thr Asn
 500 505 510
 Gly His Thr Val Ser Asp Ala Ala Ser Gly Ala Phe Gly Cys Ser Val
 515 520 525
 Arg Cys Val Lys Gly Thr Lys Gln
 530 535

<210> 8210
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 8210
 Val Cys Val Leu Gln Ser Asp Met Thr Val Leu Asn Thr Gln Trp Cys
 1 5 10 15
 Phe Lys Lys Arg Thr Ser Asp Ala Thr Lys Ile Arg Arg Phe Phe His
 20 25 30
 Leu Cys Lys Phe Phe Tyr Ile Val Leu Ile Ile Ser His Leu Ser Ile
 35 40 45
 Leu Leu Ala Phe Ser Ala Glu Ser Lys Asn Ser Val Ser Lys Asp Val
 50 55 60
 Arg Leu Leu Lys His Arg Leu Lys Asn
 65 70

<210> 8211
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 8211
 Leu Phe Pro Ser Phe Asn Cys Thr Leu Trp Val Asp Val Ile Ser Val
 1 5 10 15
 Leu Leu Phe Thr Ile Arg Pro Pro Thr Val Ser Val Leu Lys Cys Thr
 20 25 30
 Val Ile Val Leu Ala Pro Ala Asn Gly Thr Met Arg Met Val Val Leu
 35 40 45
 Arg Ala Val Leu Gly Leu Asn Ala Ala Val Leu Phe Val Leu Val Ala
 50 55 60
 Thr Thr Leu Val Glu Gly Pro Ile Phe His Asp Val Glu Phe Pro Pro
 65 70 75 80
 Cys Phe Thr Tyr Thr Pro Val Gln Leu Val Ile Val Leu Leu Gly Asn
 85 90 95
 Pro Val Gly Leu Met Val Ile Val Ser Leu His Asn Phe
 100 105

<210> 8212

<211> 124
 <212> PRT
 <213> B.fragilis

<400> 8212

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Pro Thr Leu Ser Thr Thr Gln Ile Thr Thr Leu Met Leu Thr Gln Phe
1          5          10          15
Leu Asn Leu Leu Ala Thr Ile Ile Ser Val Ile Ser Leu Leu Ile Val
          20          25          30
Thr Tyr Gly Ala Leu Ile Ala Ile Ser Phe Ile Ile Asn Glu Leu
          35          40          45
Lys Arg Val Thr Gly Ala Tyr Thr Pro Thr Asn Ile Arg Lys Leu Arg
          50          55          60
Ala Val Phe Gly Thr Tyr Leu Leu Leu Gly Leu Glu Phe Leu Ile Ala
65          70          75          80
Ser Asp Ile Leu Lys Thr Val Leu Glu Pro Thr Met Asn Glu Leu Ile
          85          90          95
Ile Leu Gly Gly Ile Val Val Val Arg Thr Ile Leu Ser Val Phe Leu
          100          105          110
Asn Lys Glu Ile Lys Glu Leu Glu Thr Glu Asn Asn
          115          120

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<210> 8213
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 8213

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1          5          10          15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
          20          25          30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
          35          40          45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
          50          55          60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65          70          75          80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
          85          90          95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
          100          105          110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
          115          120          125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
          130          135          140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145          150          155          160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
          165          170          175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
          180          185          190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
          195          200          205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
210          215          220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225          230          235          240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu

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[illegible]

<400> 8214

<210> 8215

<400> 8215

His 1	His	Lys	His	Ile 5	Asn	Asn	Ser	Val	Ser 10	Thr	Ser	Trp	Leu	Phe 15	Gly
Ile	Leu	Leu	Glu 20	Thr	Leu	Phe	Val	Lys 25	Thr	Arg	Thr	Arg	Met 30	Ile	Arg
His	Tyr	Phe	Lys 35	Ile	Ala	Phe	Arg 40	Asn	Leu	Leu	Lys	Tyr 45	Lys	Thr	Gln
Ser	Ile	Ile	Ser 50	Ile	Ile	Gly 55	Leu	Ala	Val	Gly	Ile 60	Thr	Cys	Phe	Ala
Leu 65	Ala	Thr	Leu	Trp 70	Ile	Arg	Tyr	Glu	Met 75	Thr	Tyr	Asp	Thr	Phe 80	His
Arg	Arg	Ala	Asp 85	Asp	Ile	Tyr	Leu	Val 90	Arg	Ala	Gln	Leu	Thr 95	Ile	Thr

Asp Gly Thr Leu Ser Asn Ser Met Pro Tyr Pro Ala Ile Glu Tyr Leu
 100 105 110
 Arg Lys Asn Ile Ser Glu Ile Glu Asp Ile Cys Gly Ile Ser Pro Phe
 115 120 125
 Lys Thr Asn Leu Arg Phe Lys Asp Lys Gly Gly Asp Leu Leu Ala Ile
 130 135 140
 Glu Val Asp Ser Ala Phe Ile Arg Met Phe Asp Val Arg Ile Leu Gln
 145 150 155 160
 Gly Asn Val Asn Phe Leu Lys Lys Lys Ser Asn Glu Ile Ala Ile Thr
 165 170 175
 Glu Ala Val Ala Lys Glu Trp Phe Gly Asn Glu Ser Pro Leu Gly Lys
 180 185 190
 Glu Ile Glu Leu Gly Ser Arg Pro Cys Lys Val Cys Ala Val Val Ser
 195 200 205
 Gly Trp Ser Gln His Ser Asn Leu Ser Tyr Gly Ala Leu Leu Pro Ala
 210 215 220
 Arg His His Pro Ser Trp Gln Ser Asn Ser Glu Gln Ile Phe Val Arg
 225 230 235 240
 Ile Leu Pro Asp Thr Asp Lys Ser Ala Leu Gln Lys Arg Ile Ser Ser
 245 250 255
 Leu Asp Ala Ser Ser Gln Glu Lys Glu Ser Thr Leu Gly Lys Leu Asn
 260 265 270
 Phe Thr Pro Ile Thr Ser Leu Arg Tyr Ser Asp Tyr Leu Gln Lys Asp
 275 280 285
 Glu Ile Val Ile Ser Phe Asn Tyr Ile Arg Tyr Phe Ala Met Ala Gly
 290 295 300
 Val Leu Val Ile Val Cys Ser Leu Phe Asn Tyr Leu Thr Leu Phe Val
 305 310 315 320
 Ser Arg Leu Arg Met Arg Gly Arg Glu Leu Gly Leu Arg Lys Val Cys
 325 330 335
 Gly Ser Thr Asn Arg Ser Leu Phe Ala Leu Leu Ser Val Glu Tyr Leu
 340 345 350
 Ile Val Leu Leu Ala Gly Ser Leu Leu Gly Met Ala Phe Ile Glu Ala
 355 360 365
 Cys Leu Pro His Phe Ile Glu Leu Ala Gln Ile Ser Glu Ala Thr Pro
 370 375 380
 Leu Tyr Thr Glu Val Ile Ile Tyr Ile Leu Ala Val Ile Val Leu Ser
 385 390 395 400
 Phe Gly Ile Ser Gln Ile Pro Leu Tyr Tyr Phe Arg Ser Arg Thr Leu
 405 410 415
 Gln Ser Ser Ile Arg Asn Lys Lys Gly Ser Pro Gln Arg Gly Ile Phe
 420 425 430
 Arg Arg Leu Gly Leu Ile Ala Gln Leu Ile Ile Ser Leu Gly Phe Ile
 435 440 445
 Phe Cys Thr Thr Ile Met Met Lys Gln Leu Tyr Tyr Leu Lys Asn Thr
 450 455 460
 Asp Leu Gly Ile Glu Arg His Asn Ile Gly Asn Val Ala Val Trp Met
 465 470 475 480
 Lys Gly Asp Ile Asn Glu Trp Ser Ser Lys Ile Ala Asn Leu Pro Met
 485 490 495
 Val Thr Glu Ala Leu Pro Pro His Tyr Phe Pro Ile Val Pro Thr Gly
 500 505 510
 Pro Met Met Tyr Thr Asp Ile Asn Gly Trp Asp Gly Leu Asn Glu Thr
 515 520 525
 Thr Asp Glu Thr Tyr Ser Val Gly Leu Ile Pro Ser Gly Lys Glu Phe
 530 535 540
 Phe Asp Phe Tyr Gly Leu Gln Leu Thr Glu Gly Glu Trp Leu Ser Glu
 545 550 555 560
 Lys Asn Ser Pro Gly Asp Val Ile Ile Asn Glu Thr Ala Ala Leu Thr

				565				570					575			
Phe	Gly	Trp	Arg	Asn	Pro	Val	Gly	Lys	Gln	Phe	Tyr	Ser	Glu	Tyr	Glu	
			580					585					590			
His	Asn	Arg	Thr	Tyr	Tyr	Thr	Val	Val	Gly	Val	Val	Lys	Asp	Phe	Ser	
		595					600					605				
Tyr	Leu	Pro	Pro	Thr	Ile	Ala	Pro	Arg	Pro	Leu	Ala	Phe	Val	Arg	Thr	
	610					615					620					
Glu	Glu	Gln	Lys	Tyr	Leu	Trp	Ser	Arg	Ala	Ser	Ile	Leu	Phe	Lys	Phe	
625					630					635					640	
Thr	Glu	Gly	Ser	Trp	Glu	Ala	Cys	Lys	Asp	Thr	Ile	Arg	Lys	Met	Lys	
			645						650					655		
Glu	Glu	Asp	Phe	Pro	Ser	Ser	Phe	Leu	Arg	Leu	Tyr	Asn	Glu	Glu	Glu	
		660						665					670			
Glu	Tyr	Asn	Lys	Pro	Lys	Ile	Arg	Asn	Tyr	His	Pro	Ile	His	Asp		
	675						680					685				

<210> 8216

<211> 83

<212> PRT

<213> B.fragilis

<400> 8216

Val	Pro	Glu	His	Gln	Ile	Val	Ala	Gln	Asp	Phe	Ala	Met	Ser	Glu	Phe	
1				5					10					15		
Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Met	
			20					25					30			
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu	
		35					40					45				
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu	
	50					55					60					
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser	
65					70					75					80	
Ser	Ala	Arg														

<210> 8217

<211> 837

<212> PRT

<213> B.fragilis

<400> 8217

Phe	Ser	Leu	Asn	Ile	Leu	Ile	Ser	Lys	Arg	Leu	Lys	Phe	Phe	Gln	Thr	
1				5					10					15		
Leu	Cys	Tyr	Ser	Val	Val	Asn	Gln	Thr	Gln	Asn	His	Thr	Asn	Met	Lys	
			20					25					30			
Thr	Ile	Arg	Leu	Ala	Trp	Lys	Ala	Leu	Ala	Arg	Phe	Arg	Thr	Tyr	Thr	
		35					40					45				
Phe	Ile	Asn	Ile	Leu	Gly	Leu	Ala	Leu	Ser	Leu	Ala	Cys	Val	Leu	Ile	
	50					55					60					
Ile	Leu	Arg	Tyr	Ile	His	Gln	Glu	Val	Thr	Val	Asn	His	Phe	Cys	Lys	
65					70					75					80	
Asp	Leu	Glu	Asn	Thr	Tyr	Leu	Leu	Tyr	Ile	Glu	Tyr	Glu	Asp	Gly	Arg	
			85						90				95			
Arg	Thr	Ile	Ser	Ser	Asn	Glu	Asp	Arg	Asn	Asn	Asp	Pro	Asn	Phe	Ile	
		100						105					110			
Asp	Pro	Leu	Asn	Asp	Pro	Ser	Val	Leu	Lys	Ser	Thr	Arg	Trp	Ile	Asn	
	115						120					125				
Phe	Pro	Glu	Asp	Arg	Ile	Thr	Val	Gly	Lys	Gln	Ile	Tyr	Asn	Val	Lys	
	130					135					140					

Thr	Val	Val	Thr	Asp	Ser	Val	Phe	Leu	Gln	Ile	Leu	Pro	Tyr	Pro	Ser	145	150	155	160
Val	Ser	Gly	Ile	Ser	Ser	Leu	Lys	Ser	Pro	Asn	Asp	Ala	Ile	Ile	Thr	165	170	175	
Arg	Arg	Leu	Ala	Glu	Arg	Leu	Phe	Gly	Lys	Glu	Asn	Pro	Ile	Gly	Lys	180	185	190	
Thr	Met	Thr	Tyr	Ser	Thr	Gly	Asp	Ile	Val	Thr	Val	Thr	Gly	Val	Ile	195	200	205	
Gly	Glu	Pro	Thr	Thr	Lys	Ser	Phe	Leu	Asp	Phe	Asp	Leu	Ile	Ile	Ser	210	215	220	
Glu	Arg	Leu	Gln	His	Ser	Trp	Ser	Arg	Leu	Ser	Asn	Ser	Leu	Val	Gln	225	230	235	240
Leu	Ile	Pro	Gly	Thr	Asp	Phe	Lys	Lys	Leu	Asn	Val	Lys	Asn	Glu	Lys	245	250	255	
Phe	Met	Lys	Leu	Arg	Cys	His	Met	Asp	Ala	Pro	Thr	Arg	Leu	Gln	Phe	260	265	270	
Phe	Pro	Leu	Lys	Asp	Phe	Tyr	Phe	Asp	Lys	Thr	Val	Arg	Val	Tyr	Asn	275	280	285	
Asn	Asn	Ile	Arg	Lys	Gly	Asn	Tyr	Asn	Asn	Ile	Leu	Val	Leu	Ala	Val	290	295	300	
Val	Thr	Ile	Ala	Leu	Leu	Ile	Ile	Gly	Leu	Phe	Asn	Phe	Ile	Asn	Ile	305	310	315	320
Tyr	Thr	Val	Met	Met	Leu	Lys	Arg	Ala	Arg	Glu	Phe	Gly	Val	Lys	Lys	325	330	335	
Val	Tyr	Gly	Ala	Gly	Ala	Lys	Asp	Val	Phe	Ala	Gln	Ile	Phe	Thr	Glu	340	345	350	
Asn	Phe	Ile	Leu	Thr	Gly	Met	Ala	Leu	Cys	Ile	Ser	Trp	Cys	Ile	Ile	355	360	365	
Glu	Ile	Thr	Gly	Gly	Met	Met	Glu	His	Val	Leu	Arg	Ile	Pro	Gln	Thr	370	375	380	
Ser	Asn	Thr	Glu	Phe	Ser	Ala	Thr	Leu	Ser	Val	Gly	Ile	Leu	Ile	Leu	385	390	395	400
Leu	Pro	Leu	Leu	Thr	Ser	Ile	Tyr	Pro	Phe	Ile	Arg	Tyr	Asn	Tyr	Val	405	410	415	
Ser	Pro	Ser	Val	Ser	Ile	Arg	Ser	Val	Asn	Ala	Gly	Gly	His	Ser	Ile	420	425	430	
Val	Ser	Arg	Val	Leu	Phe	Leu	Phe	Val	Gln	Tyr	Ile	Ile	Thr	Phe	Val	435	440	445	
Leu	Ile	Ile	Val	Ser	Leu	Phe	Thr	Lys	Gln	Val	Arg	Phe	Met	Leu		450	455	460	
Ser	Ala	Asp	Leu	Asn	Tyr	Thr	Thr	Lys	Asp	Ile	Ile	Gln	Cys	Gln	Leu	465	470	475	480
Tyr	Ala	Glu	Arg	Ser	Ser	Tyr	Asp	Ile	Asn	Ile	Ser	Asp	Glu	Glu	Trp	485	490	495	
Glu	Arg	Arg	Lys	Gln	Arg	Glu	Lys	Ser	Asn	Leu	Ala	Tyr	Ile	Lys	Glu	500	505	510	
Glu	Met	Asp	His	Ser	Pro	Leu	Phe	Ile	Arg	Trp	Glu	Tyr	Gly	Glu	Asn	515	520	525	
Pro	Asn	Gln	Leu	Asp	Asp	Asn	Tyr	Ile	Asn	Val	Arg	Asn	Ala	Gln	Arg	530	535	540	
Asp	Glu	Phe	Lys	Gln	Val	Ile	Tyr	Ser	Ser	Leu	Ser	Asn	Lys	Tyr	Ile	545	550	555	560
Glu	Leu	Phe	Gly	Phe	Gln	Leu	Lys	Glu	Gly	Arg	Leu	Trp	Asn	Asp	Ser	565	570	575	
Val	Asp	Gln	Trp	Thr	Asp	Tyr	Lys	Met	Ile	Ile	Asn	Glu	Ser	Ala	Lys	580	585	590	
Ser	Leu	Leu	Glu	Ile	Asp	Asn	Ile	Glu	Thr	Ala	Leu	Ile	Gln	Pro	Glu	595	600	605	
Arg	Arg	Leu	Trp	Trp	Ser	Leu	Ser	Lys	Ser	Glu	Glu	Met	Lys	Lys	Asn				

145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605

610	615	620
Pro Pro Tyr Gln Val Ile Gly Val Ile Lys Asp Phe Lys Ile Gly His		
625	630	635
Leu Ser Lys Thr Thr Pro Pro Leu Phe Ile Val Tyr Glu Asp Pro Arg		
	645	650
Gly Ser Tyr Arg Asp Arg Leu Met Ala Gln Ile Val Pro Gly Lys Lys		
	660	665
Gln Glu Ala Ile Ala Phe Leu Lys Lys Leu Arg Asp Glu Ile Leu Gly		
	675	680
Glu Gly Glu Phe Glu Tyr Ser Phe Leu Glu Asp Glu Ile Ala Thr Met		
	690	695
Tyr Gln Glu Asp Lys Arg Thr Ala Glu Ile Tyr Ser Leu Phe Ser Ile		
705	710	715
Ile Ala Ile Leu Ile Ser Cys Leu Gly Leu Phe Gly Leu Ser Met Phe		
	725	730
Asp Ile Arg Gln Arg Tyr Arg Glu Ile Ala Leu Arg Lys Val Asn Gly		
	740	745
Ala Thr Leu Lys Glu Ile Tyr Pro Leu Leu Leu Lys Lys Tyr Ser Ile		
	755	760
Ile Leu Gly Met Ala Phe Ile Ile Ser Ala Pro Leu Ser Trp Tyr Ile		
	770	775
Ile Ser Lys Tyr Leu Glu Gly Phe Ala Asn Lys Ala Pro Ile Ser Trp		
785	790	795
Trp Leu Phe Ala Ile Ala Ala Ile Val Thr Ala Phe Ile Ser Leu Ala		
	805	810
Thr Leu Ile Trp Gln Ile Arg Lys Ala Ala Asn Ile Asn Pro Ala Lys		
	820	825
Val Leu Lys Gly Glu		830
	835	

<210> 8218

<211> 85

<212> PRT

<213> B.fragilis

<400> 8218

Glu Thr Ser Lys Ser Gln Pro Ile Leu Phe Ser Tyr Asp Thr Ala His	
1	5
Ser Ser Leu Glu Val Thr Ser Thr Val Cys Pro Val Pro Thr Phe Thr	
	20
Ser Asp Ser Glu Asp Leu Phe Thr Glu Arg Ala Asp Ala Pro Ala Ala	
	35
His Leu Asn Trp His Leu Thr Ile Phe Pro Ala Leu Ser Val Thr Ser	
	50
Thr Leu Gly Ala Asn Gly Val Gly Asn Gly Leu Arg Ala Ile Ser Ser	
65	70
Leu Met Glu Asn Ala	
	85

<210> 8219

<211> 148

<212> PRT

<213> B.fragilis

<400> 8219

Asn Tyr Ile Asp Met Lys Leu Ile Ile Tyr Asn Ser Arg Leu Ala Lys	
1	5
Arg Met Leu Phe Pro Gly Tyr Ser Thr Ile Met Leu Phe Gly Ile Ile	
	20
	25
	30

[illegible]

<400> 8220

Tyr 1	Asn	Met	Asp	Gln 5	Leu	Gly	Lys	Ile	Leu 10	Ile	Val	Gly	Asp	Asn 15	Glu
Asp	Val	Leu	Phe 20	Ala	Leu	Asn	Leu	Leu	Leu	Glu	Pro	Tyr	Thr 30	Glu	Lys
Ile	Lys	Val	Ala 35	Thr	Thr	Pro	Asp 40	Arg	Ile	Glu	His	Phe 45	Met	Thr	Thr
Phe 50	Gly	Pro	Asp	Ile	Ile	Leu 55	Leu	Asp	Met	Asn	Phe 60	Ser	Arg	Asp	Ala
Ile 65	Ser	Gly	Gln	Glu	Gly 70	Phe	Glu	Ser	Leu	Glu	Gln	Ile	Leu	Lys	Ile 80
Asp	Pro	Gln	Ala 85	Ile	Val	Ile	Phe	Met	Thr 90	Ala	Tyr	Ala	Asp 95	Thr	Asp
Lys	Ala	Val	Arg 100	Ala	Ile	Lys	Ala	Gly 105	Ala	Thr	Asp	Phe 110	Ile	Pro	Lys
Pro	Trp	Glu 115	Lys	Glu	Lys	Leu	Leu	Ala 120	Thr	Leu	Ser	Ser 125	Gly	Met	Lys
Leu 130	Arg	Gln	Ser	Arg	His	Glu 135	Val	Asn	Met	Leu	Lys 140	Glu	Gln	Val	Glu
Val 145	Leu	Ser	Gly	Gln	Gly 150	Gly	Pro	Glu	Asn	Glu 155	Ile	Ile	Gly	Glu	Ser 160
Glu	Ala	Met	Gln 165	Glu	Val	Phe	Ser	Thr	Ile 170	Asn	Lys	Leu	Ser	Glu 175	Thr
Asp	Ala	Asn 180	Ile	Leu	Ile	Leu	Gly 185	Glu	Asn	Gly	Thr	Gly 190	Lys	Asp	Val
Ile	Ala	Arg 195	Leu	Leu	Tyr	Arg 200	Cys	Ser	Pro	Arg	Tyr	Gly 205	Lys	Pro	Phe
Val 210	Thr	Ile	Asp	Leu	Gly 215	Ser	Ile	Pro	Glu	Gln	Leu 220	Phe	Glu	Ser	Glu
Leu 225	Phe	Gly	Tyr	Glu	Lys 230	Gly	Ala	Phe	Thr	Asp 235	Ala	Arg	Lys	Ala	Lys 240
Ala	Gly	Arg	Met 245	Glu	Val	Ala	Thr	Gly	Gly 250	Thr	Leu	Phe	Leu	Asp 255	Glu
Ile	Gly	Asn 260	Leu	Ser	Leu	Pro	Met 265	Gln	Ser	Lys	Leu	Leu	Thr 270	Ala	Ile
Glu	Lys	Arg 275	Gln	Ile	Ser	Arg 280	Leu	Gly	Ser	Thr	Gln	Ser 285	Val	Pro	Ile

Asp Val Arg Leu Ile Cys Ala Thr Asn Ala Asp Ile Arg Ala Met Val
 290 295 300
 Asp Glu Gly Asn Phe Arg Gln Asp Leu Leu Tyr Arg Ile Asn Thr Ile
 305 310 315 320
 Glu Ile His Ile Pro Pro Leu Arg Glu Arg Gly Asn Asp Val Ile Leu
 325 330 335
 Leu Ala Glu Phe Phe Leu Glu Arg Tyr Ala Arg Lys Tyr Lys Lys Glu
 340 345 350
 Met His Gly Leu Thr Arg Glu Ala Lys Asn Lys Leu Leu Lys Tyr Asn
 355 360 365
 Trp Pro Gly Asn Val Arg Glu Leu Gln His Thr Ile Glu Arg Ala Val
 370 375 380
 Ile Leu Gly Asp Gly Ser Leu Leu Lys Pro Glu Asn Phe Leu Phe His
 385 390 395 400
 Ser Ser Val Arg Gln Lys Lys Glu Glu Glu Val Leu Asn Leu Glu Leu
 405 410 415
 Leu Glu Arg Gln Ala Val Glu Lys Ala Met Arg Leu Ser Glu Gly Asn
 420 425 430
 Ile Thr Arg Ala Ala Glu Tyr Leu Gly Ile Thr Arg Phe Ala Leu Tyr
 435 440 445
 Arg Lys Leu Glu Lys Leu Gly Leu
 450 455

<210> 8221
 <211> 495
 <212> PRT
 <213> B.fragilis

<400> 8221
 Lys Lys Lys Cys Thr Met Asn Leu Lys Thr Ile Leu Ile Ile Ala Gly
 1 5 10 15
 Cys Ser Tyr Ile Phe Pro Ala Thr Ala Gln Glu Arg Thr Met Glu Leu
 20 25 30
 Ser Leu Asp Glu Thr Val Lys Leu Ala Lys Leu Gln Ser Pro Asp Ala
 35 40 45
 Gln Thr Ala Arg His Ser Phe Arg Ser Ala Tyr Trp Asn Tyr Lys Tyr
 50 55 60
 Tyr Arg Ala Asn Tyr Leu Pro Ala Leu Ser Leu Thr Ser Asp Pro Asn
 65 70 75 80
 Leu Asn Arg Ala Ile Asn Lys Val Thr Leu Gly Asp Gly Thr Val Lys
 85 90 95
 Phe Val Glu Gln Asn Met Leu Ser Thr Asp Leu Thr Leu Asn Leu Thr
 100 105 110
 Gln Asn Ile Pro Trp Thr Gly Gly Ser Leu Phe Val Glu Thr Ala Ala
 115 120 125
 Gln Arg Met Asp Ile Phe Ser Asp His Thr Thr Ala Trp Gln Thr Ser
 130 135 140
 Pro Ile Asn Ile Gly Tyr Arg Gln Ser Leu Phe Gly Tyr Asn Ser Leu
 145 150 155 160
 Lys Trp Asp Arg Arg Ile Glu Pro Val Arg Tyr Arg Glu Ala Lys Lys
 165 170 175
 Ser Tyr Val Glu Thr Leu Glu Leu Val Ala Thr Arg Ala Thr Gln Lys
 180 185 190
 Phe Phe Asn Leu Ala Thr Ala Gln Ser Asn Tyr Glu Thr Ala Thr Thr
 195 200 205
 Asn Tyr Ala Asn Ala Asp Thr Leu Tyr Gln Tyr Ala Gln Gly Arg Tyr
 210 215 220
 Asn Ile Gly Thr Ile Thr Glu Asn Glu Met Leu Gln Leu Glu Leu Asn
 225 230 235 240

Lys Leu Thr Glu Glu Thr Asn Arg Met Asn Ala Arg Ile Glu Met Asp
 245 250 255
 Asn Cys Met Gln Glu Leu Arg Ser Tyr Leu Gly Ile Gln Ser Asp Glu
 260 265 270
 Glu Leu Lys Val Lys Ile Asn Asp His Val Pro Asp Phe Ser Val Glu
 275 280 285
 Leu His Glu Ala Leu Leu Leu Ala Asn Glu Asn Ser Pro Glu Ile Gln
 290 295 300
 Asn Met Ile Arg Arg Lys Leu Glu Ser Glu Ser Asn Val Ser Tyr Ala
 305 310 315 320
 Arg Ala Asn Ala Gly Leu Lys Ala Asp Ile Tyr Leu Arg Phe Gly Leu
 325 330 335
 Thr Gln Thr Ala Asp Lys Leu Gly Ser Ala Tyr Lys Arg Pro Leu Asp
 340 345 350
 Gln Gln Tyr Val Ser Leu Ser Val Ala Leu Pro Ile Leu Asp Trp Gly
 355 360 365
 Arg Gly Lys Gly Lys Val Arg Val Ala Arg Ser Asn Arg Asp Leu Val
 370 375 380
 Tyr Thr Gln Val Glu Gln Asp Lys Thr Asp Phe Glu Leu Asn Ile Arg
 385 390 395 400
 Lys Leu Val Lys Gln Phe Asn Leu Gln Ala Gln Arg Val Arg Ile Ala
 405 410 415
 Ala Arg Thr Asp Glu Thr Ala Gln Arg Arg Ser Asp Val Ala Arg Lys
 420 425 430
 Leu Tyr Leu Leu Gly Lys Ser Thr Ile Leu Asp Leu Asn Ala Ser Ile
 435 440 445
 Thr Glu Lys Asp Gln Ala Arg Arg Asn Tyr Ile Thr Ala Leu Tyr Asn
 450 455 460
 Tyr Trp Ser Leu Tyr Tyr Thr Leu Arg Ser Leu Thr Leu Phe Asp Phe
 465 470 475 480
 Glu Gly Lys Thr Pro Leu Thr Glu Asn Tyr Asp Leu Leu Ile Asp
 485 490 495

<210> 8222

<211> 153

<212> PRT

<213> B.fragilis

<400> 8222

His Asp Cys Arg Ile Pro Arg Lys Gln His Ala Phe Cys Lys Pro Ala
 1 5 10 15
 Val Ile Asn Asn Lys Phe His Val Asp Val Ile Leu Met Val Ala Ala
 20 25 30
 Lys Phe Ala Tyr Ser Phe Gln Gly Val Lys Asp Ile Leu Val Leu Met
 35 40 45
 Glu Leu Gly Lys Tyr Pro Gly Arg Gly Val Lys Ala Lys Arg Ile Lys
 50 55 60
 Thr Val Glu Ile Asn His Leu Ile Asn Tyr Lys Tyr Gly Lys Ser Lys
 65 70 75 80
 Leu Val Gln Cys Lys Pro His Val Gly Gln Glu Arg Trp Arg Phe Asp
 85 90 95
 Asn Gln Cys Gly Cys Ser His Arg Thr Cys Ser Thr Lys Tyr Ser Ser
 100 105 110
 Tyr Arg Asn Ser Gly Lys Arg Asn Glu Thr Leu Ser Gln Tyr Ser Gly
 115 120 125
 Ile Ser Gly Arg Cys Arg Gly Ile His Asn His Gly Tyr Lys Gln Thr
 130 135 140
 Gly Pro Ser Leu Phe Arg Arg Ser Arg
 145 150

<210> 8223
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8223
 His Asp Cys Arg Ile Pro Arg Lys Gln His Ala Phe Cys Lys Pro Ala
 1 5 10 15
 Val Ile Asn Asn Lys Phe His Val Asp Val Ile Leu Met Val Ala Ala
 20 25 30
 Lys Phe Ala Tyr Ser Phe Gln Gly Val Lys Asp Ile Leu Val Leu Met
 35 40 45
 Glu Leu Gly Lys His Leu Gly Arg Gly Val Lys Ala Lys Arg Ile Lys
 50 55 60
 Asn Ser Arg Asn His Leu Ile Asn Tyr Asp
 65 70

<210> 8224
 <211> 212
 <212> PRT
 <213> B.fragilis

<400> 8224
 Ile Thr Ile Ser Met Ala Lys Ala Ser Trp Cys Asn Val Ser Pro Met
 1 5 10 15
 Ser Gly Ser Glu Asn Gly Thr Leu Thr Ile Ser Ala Ala Ala His Ala
 20 25 30
 Gly Arg Glu Ala Arg Ser Thr Thr Val Thr Ala Lys Asn Gly
 35 40 45
 Thr Lys Pro Ser Ala Ser Ile Ala Val Ser Gln Ala Gly Val Gly Val
 50 55 60
 Gln Leu Thr Met Asp Thr Ser Lys Pro Asp Leu Pro Gly Glu Gly Gly
 65 70 75 80
 Ser Val Thr Ile Asn Gly Asn Ser Asn Ser Pro Thr Leu Lys Ile Ser
 85 90 95
 Val Pro Leu Ile Asn Phe Pro Gly Val Thr Ala Ser Ala Lys Phe Asn
 100 105 110
 Ala Pro Gly Ile Thr Asp Lys Val Leu Ala Ala Ser Glu Thr Val Thr
 115 120 125
 Ile Pro Gly Asp Pro Gly Ala Asn Gly Ser Tyr Ala Phe Ser Ile Lys
 130 135 140
 Leu Glu Ile Ala Arg Asn Pro Leu Pro Thr Pro Leu Ala Pro Asn Val
 145 150 155 160
 Asp Val Thr Asp Ser Ala Gly Lys Met Val Arg Cys Gln Phe Lys Trp
 165 170 175
 Ala Ala Gly Ala Ser Ala Leu Ser Val Asn Lys Ser Ser Leu Ser Leu
 180 185 190
 Val Asn Val Gly Thr Gly Gln Thr Val Asp Val Thr Ser Asn Asp Glu
 195 200 205
 Trp Ala Val Ser
 210

<210> 8225
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8225

Leu Lys His Ser Glu Pro Thr Ile Cys Asn Gly Val Tyr Ile Ile Ile
 1 5 10 15
 Asn Lys Arg Lys Glu Ile Gly Leu Met Asn Thr Glu Lys Glu Lys Thr
 20 25 30
 Ser Ser Glu Glu Lys Lys Ala Glu Lys Val Leu Lys Asp Lys Val
 35 40 45
 Pro Val Gln Gln Thr Gly Thr Tyr Ser Glu Ala Thr Lys Lys Glu Val
 50 55 60
 Arg Asp Ala Val Lys Glu Leu Asn Pro Asp Met Ser Gly Leu Asp Arg
 65 70 75 80
 Gly

<210> 8226

<211> 434

<212> PRT

<213> B.fragilis

<400> 8226

Pro Ala Asp Arg Leu Thr Gly Ile Ile Asn Cys Lys Ser Lys Lys Gln
 1 5 10 15
 Asn Asn Met Asp Ile Lys Ile Glu Lys Lys Pro Trp Tyr Ile Arg Tyr
 20 25 30
 Lys Phe Tyr Ile Ala Gly Gly Ile Ala Phe Val Ala Phe Leu Val Tyr
 35 40 45
 Val Ile Ile Leu Ser Ala Gly Pro Arg Lys Leu Arg Ile Glu Ser Glu
 50 55 60
 Asn Ile Gln Ile Ala Glu Val Lys Asp Asp Lys Phe Met Glu Tyr Val
 65 70 75 80
 Asp Val Glu Gly Leu Ile Gln Pro Ile Leu Thr Ile Lys Val Asn Thr
 85 90 95
 Arg Glu Ala Gly Ser Val Glu Arg Ile Ile Ala Glu Glu Gly Ser Leu
 100 105 110
 Leu Gln Lys Gly Asp Thr Ile Leu Thr Leu Ser Asn Pro Asp Leu Leu
 115 120 125
 Arg Ser Ile Glu Asp Gln Arg Asp Asp Trp Glu Lys Gln Arg Ile Thr
 130 135 140
 Tyr Gln Glu Lys Glu Ile Glu Met Glu Gln Lys Ser Leu Ser Leu Lys
 145 150 155 160
 Gln Gln Thr Leu Glu Thr Asn Tyr Glu Leu Ala Arg Leu Lys Lys Ser
 165 170 175
 Phe Thr Leu Asp Lys Glu Glu Phe Arg Met Gly Ile Lys Ser Lys Ala
 180 185 190
 Gln Leu Glu Val Ser Glu Asp Glu Tyr Asn Tyr Lys Val Lys Asn Ala
 195 200 205
 Glu Leu Gln Arg Glu Gly Leu Arg His Asp Ser Ala Val Thr Ile Ile
 210 215 220
 Arg Lys Asp Leu Ile Arg Thr Asp Met Glu Arg Glu Arg Lys Lys Tyr
 225 230 235 240
 Glu Arg Ala Thr Glu Arg Leu Gly Asn Leu Val Val Lys Ala Pro Ile
 245 250 255
 Ser Gly Gln Leu Ser Phe Val Lys Val Thr Pro Gly Gln Gln Val Gly
 260 265 270
 Ser Ser Glu Ser Ile Ala Glu Ile Lys Val Leu Asp Gln Tyr Lys Ile
 275 280 285
 His Thr Ser Leu Ser Glu Tyr Thr Ile Asp Arg Ile Thr Thr Gly Leu
 290 295 300
 Pro Ala Thr Val Asn Tyr Gln Gly Lys Lys Tyr Pro Leu Arg Ile Thr
 305 310 315 320

Lys Val Val Pro Glu Val Lys Asp Arg Met Phe Asp Val Asp Leu Val
 325 330 335
 Phe Thr Gly Glu Met Pro Asp Asn Val Arg Val Gly Lys Ser Phe Arg
 340 345 350
 Val Gln Ile Glu Leu Gly Gln Pro Glu Gln Ala Ile Val Ile Pro Arg
 355 360 365
 Gly Asn Phe Tyr Gln Ala Thr Gly Gly Gln Trp Ile Tyr Lys Ala Asn
 370 375 380
 Ala Ser Arg Thr Lys Ala Val Arg Thr Pro Ile Thr Ile Gly Arg Gln
 385 390 395 400
 Asn Pro Gln Gln Tyr Glu Ile Thr Gly Gly Leu Glu Pro Gly Asp Tyr
 405 410 415
 Val Val Thr Thr Gly Tyr Asp Thr Phe Gly Glu Ala Glu Glu Leu Ile
 420 425 430
 Leu Lys

<210> 8227

<211> 429

<212> PRT

<213> B.fragilis

<400> 8227

Lys Thr Gly Leu Met Lys Arg Tyr Ser Ile Ser Val Val Leu His Ile
 1 5 10 15
 Leu Leu Leu Val Val Leu Ser Ile Gly Tyr Leu Leu Phe Cys Tyr
 20 25 30
 Glu Leu Trp Phe Ser Thr Leu Ile Val Gly Ile Leu Leu Ile Ala Thr
 35 40 45
 Gly Val His Leu Tyr Ser Ile Gln Met Lys Leu Ala Gly Met Met Arg
 50 55 60
 Arg Leu Thr Asp Cys Ile Arg Phe Asn Asp Met Thr Gln Asn Phe Gln
 65 70 75 80
 Pro Pro Phe Lys Ser Lys Met Met Val Glu Leu Ala Asp Glu Leu Ser
 85 90 95
 Gln Thr Leu Arg Leu Phe Arg Gly Arg Leu Leu Glu Glu Glu Ile Lys
 100 105 110
 His Gln Tyr Tyr Glu Asn Leu Leu Asn Lys Val Asp Thr Ala Val Val
 115 120 125
 Val Thr Asp Arg Ser Gly Arg Val Glu Trp Met Asn Arg Ala Ala Val
 130 135 140
 Ala Leu Val Gly Gln Glu Ser Arg Leu Pro Gln Glu Trp Leu Thr Thr
 145 150 155 160
 Ser Trp Asn Glu Thr Gln Val Val Arg Ile Arg Gln Gln Gly Ala Ser
 165 170 175
 Val Glu Met Ala Val Ser Cys Thr Leu Phe Ala Ala Gln Asn Lys Glu
 180 185 190
 Arg Leu Leu Val Ser Leu Lys Asn Ile His Ser Val Leu Glu Arg Asn
 195 200 205
 Glu Met Glu Ala Trp Gln Lys Leu Ile Arg Val Leu Thr His Glu Ile
 210 215 220
 Met Asn Ser Ile Thr Pro Ile Ile Ser Leu Ser Glu Thr Leu Ser Glu
 225 230 235 240
 Arg Gly Ile Pro Glu Arg Leu Ser Glu Lys Glu Tyr Gly Val Met Leu
 245 250 255
 Gln Ala Met Gln Thr Ile His Arg Arg Ser Lys Gly Leu Leu Gly Phe
 260 265 270
 Val Glu Asn Tyr Arg Arg Leu Thr Arg Ile Pro Thr Pro Ala Arg Thr
 275 280 285

Leu Val Ala Val Asp Glu Leu Phe Ser Asp Leu Arg Lys Leu Phe Pro
 290 295 300
 Asp Ser Phe Ile His Phe Ala Ala Thr His Arg Gly Ala Thr Leu Tyr
 305 310 315 320
 Ile Asp Arg Ala Gln Ile Glu Gln Val Leu Ile Asn Leu Ile Lys Asn
 325 330 335
 Ala Lys Glu Ser Cys Gly Gln Asn Thr Ala Pro Gln Ile Glu Val Glu
 340 345 350
 Leu Glu Gln Val Pro Gly Lys Val Cys Ser Leu Thr Val Arg Asp Asn
 355 360 365
 Gly Glu Gly Ile Leu Pro Glu Val Ile Asp Lys Val Phe Val Pro Phe
 370 375 380
 Phe Thr Thr Lys Pro Ser Gly Ser Gly Ile Gly Leu Ser Leu Cys Lys
 385 390 395 400
 Gln Ile Met Asn Leu His Gly Gly Thr Ile Thr Val Ser Ser Glu Ile
 405 410 415
 Gly Lys Gly Ser Cys Phe Thr Leu Met Phe Pro Gly Arg
 420 425

<210> 8228

<211> 417

<212> PRT

<213> B.fragilis

<400> 8228

Val Phe Ile Met Ala Ser Ile Lys Leu Tyr Phe Asp Lys Arg Val Asn
 1 5 10 15
 Arg Lys Asp Gly Lys Phe Pro Leu Lys Ile Asn Val Thr His Lys Arg
 20 25 30
 Gln Gln Ala Leu Ile Asn Leu Gly Val Leu Leu Ser Pro Asp Gln Trp
 35 40 45
 Asp Ser Thr Lys Gly Lys Val Ile Asn Gly Pro Asn Lys Ser Phe Leu
 50 55 60
 Asn Gly Tyr Ile Ser Gln Arg Val His Cys Ala Glu Thr Glu Leu Leu
 65 70 75 80
 Asn Leu Arg Ile Ala Gly Lys Leu Asp Leu Met Thr Gly Lys Gln Phe
 85 90 95
 Lys Glu His Leu Gln Arg Ile Leu Leu Arg Gly Lys Leu Glu Lys
 100 105 110
 Gln Glu Glu Thr Gly Cys Ser Phe Val Gln Tyr Tyr Thr Arg Phe Val
 115 120 125
 Glu Gly Lys Lys Asn Pro Gln Thr Lys Ala Val Tyr Gln Tyr Thr Leu
 130 135 140
 Asp Arg Ile Cys Arg Phe Val Asp Val Pro Asp Lys Phe Arg Phe Glu
 145 150 155 160
 Asp Val Thr Tyr Ala Trp Leu Lys Ser Phe Glu Ile His Leu Ser Glu
 165 170 175
 Thr Ser Lys Val Asn Ser Ile Ser Ile His Met Arg Asn Ile Arg Ala
 180 185 190
 Val Phe Asn Asp Ala Leu Asn Thr Glu Thr Ile Ser Cys Tyr Pro Phe
 195 200 205
 Arg Arg Phe Lys Ile Lys Gln Glu Ala Thr Ala Lys Arg Ala Leu Thr
 210 215 220
 Pro Glu Glu Leu Val Thr Leu Arg Asp Tyr Pro Cys Glu Glu His Gln
 225 230 235 240
 Lys Gln Tyr Val Asp Ile Phe Met Leu Ile Phe Tyr Leu Val Gly Ile
 245 250 255
 Asn Thr Val Asp Leu Cys Arg Leu Glu Lys Ile Arg Asn Gly Arg Ile
 260 265 270

Glu Tyr Arg Arg Ala Lys Thr Lys Lys Ile Tyr Asn Ile Lys Val Glu
 275 280 285
 Pro Glu Ala Ala Glu Ile Ile Glu Arg Tyr Lys Gly Ser Lys Tyr Leu
 290 295 300
 Leu Asn Ile Leu Glu Arg Tyr Lys Asn Tyr Lys Asp Tyr Ala His Arg
 305 310 315 320
 Leu Asn Glu Asn Leu Gln Glu Ile Gly Ser Val Glu Leu Val Glu Lys
 325 330 335
 Val Ile Asn Gly Lys Arg Arg Arg Val Lys Lys Arg Phe Pro Leu Phe
 340 345 350
 Pro Glu Leu Thr Val Tyr Trp Ala Arg His Thr Trp Ala Thr Ile Ala
 355 360 365
 His Lys Ile Gly Val Ser Lys Asp Val Ile Ser Leu Ala Leu Gly His
 370 375 380
 Glu Phe Gly Cys Lys Thr Thr Ser Ile Tyr Ile Asp Tyr Asp Met Glu
 385 390 395 400
 Lys Val Asp Lys Ala Asn Arg Gln Val Leu Asp Tyr Leu Glu Asn Leu
 405 410 415
 Lys

<210> 8229

<211> 210

<212> PRT

<213> B.fragilis

<400> 8229

Ile Thr Ser Met Ala Lys Ala Ser Trp Cys Asn Val Ser Pro Met Ser
 1 5 10 15
 Gly Lys Arg Asp Gly Val Leu Thr Ile Ser Ala Gly Ala His Thr Gly
 20 25 30
 Arg Val Ala Arg Asn Thr Val Val Thr Val Thr Ala Ala Asn Gly Thr
 35 40 45
 Arg Pro Ser Ala Ser Ile Ala Val Ser Gln Ala Gly Ala Gly Val Ser
 50 55 60
 Thr Thr Met Asp Thr Ser Lys Pro Asp Leu Pro Ser Ser Gly Gly Val
 65 70 75 80
 Val Asn Ile Asn Gly Thr Ser Asn Ser Ser Lys Leu Lys Trp Thr Cys
 85 90 95
 Thr Ala Arg Val Met Gly Val Asp Met Pro Ile Asp Gly Asn Tyr Val
 100 105 110
 Lys Val Ala Val Asn Gly Gly Asn Ile Gly Asn Asn Val Ala Ile Pro
 115 120 125
 Gly Asp Pro Gly Ala Ser Gly Arg Phe Asn Phe Val Ala Thr Leu Thr
 130 135 140
 Phe Pro Ala Ser Met Phe Pro Val Asp Ala Val Val Thr Phe Arg Leu
 145 150 155 160
 Thr Asp Asp Thr Asn Ser Ala Lys Gln Cys Thr Phe Thr Trp Lys Ala
 165 170 175
 Gly Ala Ser Ser Leu Ser Val Asn Lys Ser Ser Leu Ser Leu Val Asn
 180 185 190
 Gly Gly Thr Gly Gln Thr Val Asn Val Thr Ser Asn Asp Asp Trp Asn
 195 200 205
 Val Ser
 210

<210> 8230

<211> 125

<212> PRT

<213> B.fragilis

<400> 8230

Ile Lys Leu Val Leu Ile Ile His Thr Lys Asn Val Ile Met Lys Lys
 1 5 10 15
 Val Leu Val Ala Leu Thr Met Val Met Gly Met Gly Ser Ala Val Ala
 20 25 30
 Phe Ala Gln Glu Pro Val Lys Leu Pro Ala Met Glu Gln Asn Gln Gln
 35 40 45
 Thr Ser Gln Asp Lys Phe Thr Lys Ile Thr Val Lys Glu Leu Pro Gln
 50 55 60
 Val Val Lys Ser Thr Leu Ser Lys Asp Tyr Glu Gly Thr Ile Val Lys
 65 70 75 80
 Glu Ala Phe Val Ala Glu Lys Glu Asn Gly Lys Val Tyr Lys Ile Ile
 85 90 95
 Val Thr Ala Ile Lys Glu Asp Gln Ser Thr Glu Glu Ile Thr Val Leu
 100 105 110
 Leu Asn Glu Lys Gly Glu Pro Val Asn Glu Lys Asp Cys
 115 120 125

<210> 8231

<211> 229

<212> PRT

<213> B.fragilis

<400> 8231

Asn Leu Pro Ser Lys Pro Asn Leu Pro Pro Ser Val Lys Glu Gln Ala
 1 5 10 15
 Asp Asp Glu Ala Ile Arg Val Phe Thr Glu Asn Leu Arg Gln Leu Leu
 20 25 30
 Leu Ala Pro Pro Leu Gly Gln Lys Arg Val Met Gly Ile Asp Pro Gly
 35 40 45
 Phe Arg Thr Gly Cys Lys Val Val Cys Leu Asp Ala Gln Gly Asn Leu
 50 55 60
 Val His Asn Glu Asn Ile Tyr Pro His Pro Pro Val Asp Lys Lys Thr
 65 70 75 80
 Glu Ala Ala Ser Lys Leu Arg Lys Met Ile Glu Ala Tyr Lys Ile Glu
 85 90 95
 Ala Ile Ala Ile Gly Asn Gly Thr Ala Ser Arg Glu Thr Glu Asn Phe
 100 105 110
 Val Thr His Gln Gln Phe Asp Arg Pro Val Gln Val Phe Val Val Ser
 115 120 125
 Glu Gln Gly Ala Ser Ile Tyr Ser Ala Ser Lys Thr Ala Arg Asp Glu
 130 135 140
 Phe Pro Asp Tyr Asp Val Thr Val Arg Gly Ala Val Ser Ile Ala Arg
 145 150 155 160
 Arg Leu Met Asp Pro Leu Ala Glu Leu Val Lys Ile Ala Pro Lys Pro
 165 170 175
 Ile Gly Val Gly Gln Tyr Gln His Asp Val Asp Gln Thr Lys Leu Lys
 180 185 190
 Lys Ser Leu Asp Gln Thr Val Glu Asn Cys Gly Met Ser Glu Thr Thr
 195 200 205
 Lys Gly Ser Val Ile Lys Lys Arg Ile Leu Ala Ile Phe Leu Arg His
 210 215 220
 Tyr Ser Ala Asn Gly
 225

<210> 8232

<211> 982

<212> PRT
 <213> B.fragilis

<400> 8232

Phe	Glu	Thr	Ser	Asn	Leu	Met	Lys	Gln	Asn	Thr	Phe	Ile	Tyr	Ala	Ala
1				5					10					15	
Ile	Ala	Phe	Phe	Val	Cys	Ser	Ser	Cys	Thr	Ser	Gly	Lys	Tyr	Ser	Pro
			20					25					30		
Val	Asp	Tyr	Val	Asp	Pro	Phe	Ile	Gly	Thr	Gly	Phe	His	Gly	His	Thr
		35					40					45			
Tyr	Pro	Gly	Ala	Thr	Val	Pro	Phe	Gly	Ala	Val	Gln	Leu	Ser	Pro	Asp
	50					55					60				
Thr	Arg	Ala	Gly	Asn	Trp	Asp	Ala	Cys	Ala	Gly	Tyr	His	Tyr	Asp	Asp
65					70					75					80
Thr	Thr	Leu	Lys	Gly	Phe	Ser	His	Thr	His	Leu	Ser	Gly	Thr	Gly	Cys
				85					90					95	
Ile	Asp	Leu	Gly	Asp	Ile	Leu	Phe	Arg	Pro	Thr	Thr	Leu	Lys	Pro	Asp
			100					105					110		
Leu	Thr	Ala	Glu	Ser	Ile	Cys	Arg	Pro	Ala	Asn	Phe	Ser	His	Lys	Asp
		115					120					125			
Glu	Arg	Ala	Ser	Ala	Gly	Tyr	Tyr	Ser	Val	Ile	Leu	Lys	Gly	Glu	Gly
	130					135					140				
Ile	Lys	Ala	Glu	Leu	Thr	Ala	Thr	Thr	His	Thr	Gly	Met	His	Arg	Tyr
145					150					155					160
Thr	Phe	Pro	Ser	Gly	Lys	Pro	Val	Thr	Ile	Ile	Val	Asp	Leu	Ala	His
				165					170					175	
Leu	Leu	Asp	Asn	Glu	Tyr	Ile	Tyr	Glu	Ala	Glu	Leu	Glu	Arg	Thr	Thr
			180					185					190		
Ser	Asn	Glu	Ile	Val	Gly	Met	Arg	Arg	Thr	Arg	Gly	Trp	Thr	Asp	Asn
		195					200					205			
Gln	Tyr	Val	Tyr	Phe	Ala	Ala	Gln	Phe	Ser	Glu	Pro	Phe	Gln	Thr	Val
	210				215						220				
Glu	Phe	Val	Gln	Asp	Lys	Lys	Ile	Val	Ser	Ala	Glu	Thr	Lys	Gln	Val
225					230					235					240
Gly	Thr	Asp	Leu	Gln	Ala	Ile	Leu	Thr	Phe	Ala	Asp	Lys	Asp	Gly	Glu
				245					250					255	
Pro	Ile	Ile	Ala	Lys	Val	Gly	Leu	Ser	Leu	Val	Ser	Val	Asp	Asn	Ala
			260				265						270		
Arg	Lys	Asn	Leu	Ala	Glu	Glu	Val	Lys	Asp	Phe	Asn	Phe	Asp	Ala	Val
		275					280					285			
Cys	Ala	Ala	Ala	Arg	Asn	Asp	Trp	Glu	Gln	Ala	Leu	Ser	Ser	Ile	Thr
	290					295					300				
Val	Glu	Gly	Gly	Gly	Thr	Asp	Asp	Leu	Lys	Asn	Phe	Tyr	Thr	Ala	Ile
305					310						315				320
Tyr	His	Ala	Met	Val	Val	Pro	Asn	Val	Val	Ser	Asp	Val	Asn	Gly	Glu
				325					330					335	
Tyr	Arg	Arg	His	Asn	Met	Gln	Ile	Gly	Gln	Leu	Pro	Lys	Gly	Lys	Met
			340					345					350		
Gln	Tyr	Ser	Thr	Phe	Ser	Leu	Trp	Asp	Thr	Phe	Arg	Ala	Trp	Asn	Pro
		355					360					365			
Leu	Met	Thr	Leu	Ile	Asp	Thr	Ala	Leu	Val	Asn	Asn	Met	Val	Asn	Ser
	370					375					380				
Tyr	Leu	Asp	Ile	Tyr	Asp	Ala	Ser	Gly	Glu	Leu	Pro	Ile	Trp	Pro	Leu
385					390						395				400
Ser	Ala	Ala	Glu	Thr	Gly	Thr	Met	Ile	Gly	Tyr	His	Ser	Val	Ser	Val
				405					410					415	
Ile	Ala	Asp	Ala	Tyr	Leu	Lys	Gly	Ile	Arg	Gly	Phe	Asp	Ala	Glu	Lys
				420				425					430		
Ala	Leu	Asp	Ala	Met	Lys	Val	Ser	Ser	Glu	Lys	Asn	Lys	Lys	Gly	Ala

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	435						440					445				
Asp	Tyr	Tyr	Ile	Lys	Tyr	Gly	Phe	Ile	Pro	Ser	Asn	Ile	Lys	Lys	Glu	
	450					455					460					
Ser	Ile	Ser	Cys	Leu	Leu	Glu	Phe	Ala	Tyr	Asp	Asp	Trp	Cys	Ile	Ala	
465					470					475					480	
Arg	Met	Ala	Gln	Glu	Met	Gly	Lys	Glu	Asp	Val	Tyr	Arg	Lys	Tyr	Ile	
					485				490						495	
Glu	Arg	Ser	Gln	Asn	Tyr	Ile	Asn	Val	Phe	Asp	Gly	Ser	Thr	Lys	Phe	
			500					505						510		
Phe	Arg	Gly	Lys	Arg	Met	Asp	Gly	Asn	Trp	Glu	Thr	Ser	Phe	Asn	Pro	
		515					520						525			
Phe	Glu	Val	Gly	Arg	Ser	Tyr	Thr	Glu	Ala	Thr	Ala	Trp	Gln	Tyr	Arg	
		530				535					540					
Phe	Ser	Val	Pro	Tyr	Asp	Val	Asn	Gly	Met	Val	Gln	Leu	Phe	Gly	Gly	
545					550					555					560	
Lys	Glu	Lys	Phe	Ile	Thr	Ala	Leu	Asp	Ser	Ile	Phe	Ile	Ala	Asp	Pro	
					565				570						575	
Asn	Val	His	Gly	Asp	Leu	Ala	Asp	Ile	Thr	Gly	Leu	Ile	Gly	Gln	Tyr	
			580					585						590		
Ala	His	Gly	Asn	Glu	Pro	Ser	His	His	Ile	Ala	Tyr	Leu	Tyr	Asp	Tyr	
		595				600						605				
Val	Gly	Gln	Pro	Trp	Lys	Thr	Gln	Glu	Met	Thr	Arg	His	Leu	Leu	Asp	
		610				615					620					
Glu	Met	Tyr	Gln	Pro	Thr	Pro	Gly	Gly	Ile	Ser	Gly	Asn	Glu	Asp	Cys	
625					630					635					640	
Gly	Gln	Met	Ser	Ala	Trp	Tyr	Ile	Leu	Ser	Gly	Leu	Gly	Ile	Tyr	Ser	
				645					650					655		
Val	Cys	Pro	Gly	Ser	Asn	Glu	Phe	Ala	Leu	Thr	Thr	Pro	Leu	Phe	Glu	
			660					665						670		
Lys	Ala	Val	Leu	Lys	Leu	Ala	Asn	Gly	Lys	Arg	Leu	Thr	Leu	Leu	Ala	
		675					680					685				
Asn	Asp	Pro	Lys	Lys	Asn	Ile	Tyr	Ile	His	Lys	Val	Glu	Leu	Asn	Gly	
		690			695						700					
Lys	Gln	Ile	Asp	Thr	Asn	Phe	Ile	Thr	Tyr	Ala	Gln	Leu	Met	Glu	Gly	
705					710					715					720	
Gly	Glu	Leu	Arg	Phe	Thr	Leu	Ser	Asp	Lys	Pro	Asp	Lys	Ser	Arg	Gly	
				725					730					735		
Ile	Ser	Glu	Glu	Ala	Ser	Pro	Tyr	Ser	Tyr	Thr	Lys	Glu	Lys	Val	Val	
			740					745						750		
Ser	Ile	Pro	Tyr	Val	Asp	Arg	Asp	Leu	Asn	Leu	Phe	Met	Asp	Lys	Val	
		755					760					765				
Thr	Val	Ala	Leu	Ala	Thr	Thr	Thr	Glu	Gly	Ala	Glu	Leu	Arg	Tyr	Thr	
		770				775					780					
Leu	Asp	Gly	Thr	Glu	Gln	Thr	Glu	Lys	Ser	Leu	Leu	Tyr	Asp	Lys	Pro	
785					790					795		</				

Val Leu Tyr Ile Gly Asn Glu Leu Val Val Asn Asn Asp Gly Ala His
 915 920 925
 Ala Ala Ile Pro Asp Thr Gly Tyr Ile Ala Leu Glu Lys Gly Phe His
 930 935 940
 Pro Tyr Ile Leu Tyr Tyr Phe Glu Asp Tyr Glu Gly Glu His Leu Ser
 945 950 955 960
 Trp Phe Trp Lys Leu Pro Ser Ala Lys Glu Leu Ala Pro Ile Pro Thr
 965 970 975
 Ser Ala Leu Phe Val Lys
 980

<210> 8233
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8233
 Ser Met Arg Ser Thr Phe Lys Val Leu Phe Tyr Leu Lys Arg Asn Ala
 1 5 10 15
 Pro Lys Lys Asn Gly Leu Val Pro Val Met Tyr His Phe Ser Ile Tyr
 20 25 30
 Asp Asn Asn Thr Lys Leu Tyr Ser Arg Glu Gln Ser Arg Lys Glu Ala
 35 40 45
 Cys Ala Ile Asp Ile Arg Phe Leu Leu Asn Lys Lys
 50 55 60

<210> 8234
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 8234
 Lys Arg Leu Ser Met Lys Arg Asn Met Ser Arg Arg His Phe Leu Lys
 1 5 10 15
 Thr Gly Gly Leu Ala Leu Ala Ala Met Ala Met Cys Pro Pro Leu Ser
 20 25 30
 Phe Ala Ser Ser Glu Met Pro Val Gln Lys Tyr Ile Ser Leu Arg Pro
 35 40 45
 Pro Val Gly Lys Arg His Phe Val Ser Lys Ala Val Glu Ala Thr Ile
 50 55 60
 Glu Gln Thr Arg Pro Lys Ile Lys Asp Glu Lys Leu Arg Trp Met Phe
 65 70 75 80
 Glu Asn Cys Phe Pro Asn Thr Leu Asp Thr Thr Val Arg Tyr Lys Met
 85 90 95
 Lys Ala Gly Arg Ile His Ser Ser
 100

<210> 8235
 <211> 1054
 <212> PRT
 <213> B.fragilis

<400> 8235
 Thr Leu Asn Phe Glu Cys Met Lys Gln Val Asn Leu Arg Ile Tyr Gln
 1 5 10 15
 Thr Ile Leu Thr Leu Leu Val Gly Leu Phe Leu Ser Ala Gly Ala Tyr
 20 25 30
 Ala Gln Gln Ile Ser Val Arg Gly Ile Val Lys Asp Gln Met Gly Glu
 35 40 45

Pro	Val	Ile	Gly	Ala	Asn	Val	Leu	Val	Lys	Gly	Thr	Ser	Asn	Gly	Val
50						55					60				
Ile	Thr	Asp	Ile	Asp	Gly	Lys	Phe	Ala	Leu	Ser	Ala	Ala	Lys	Asn	Asp
65					70					75					80
Ile	Leu	Ile	Ile	Ser	Phe	Val	Gly	Phe	Met	Ser	Gln	Glu	Ile	Pro	Val
				85					90					95	
Thr	Gly	Lys	Asp	Leu	Met	Val	Thr	Leu	Lys	Glu	Asp	Thr	Gly	Leu	Leu
			100					105					110		
Asp	Glu	Val	Val	Val	Leu	Gly	Tyr	Gly	Ala	Asn	Ala	Arg	Lys	Gln	Asp
		115					120					125			
Leu	Ser	Ala	Ala	Val	Gly	Val	Leu	Ser	Asn	Thr	Asp	Asp	Leu	Thr	Val
		130				135					140				
Arg	Pro	Val	Ser	Ser	Thr	Glu	Ser	Leu	Leu	Gln	Gly	Gln	Leu	Ala	Gly
145					150					155					160
Val	Thr	Val	Gln	Ser	Asn	Gly	Gly	Asp	Pro	Thr	Ser	Thr	Pro	Ser	Ile
				165				170						175	
Val	Ile	Arg	Gly	Gln	Gly	Ser	Gln	Asn	Gly	Asp	Asn	Val	Leu	Trp	Val
			180					185					190		
Val	Asp	Gly	Val	Pro	Gly	Ala	Pro	Ile	Ala	Ser	Met	Ser	Asp	Ile	Glu
		195					200					205			
Ser	Ile	Val	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ala	Ala	Ile	Tyr	Gly	Ala
		210				215					220				
Gln	Ser	Gly	Ala	Gly	Gly	Val	Ile	Leu	Val	Thr	Thr	Lys	Lys	Ala	Lys
225					230					235					240
Ala	Gly	Ile	Pro	Thr	Leu	Ser	Tyr	Glu	Gly	Thr	Tyr	Gly	Ile	Arg	Gln
				245					250					255	
Ala	Thr	Asn	Leu	Pro	Glu	Pro	Leu	Asn	Ala	Glu	Glu	Glu	Leu	Glu	Met
			260					265					270		
Arg	Lys	Arg	Ser	Tyr	Ala	Asn	Ala	Asn	Val	Thr	Leu	Pro	Asp	Gly	Trp
		275					280					285			
Asn	Ile	Glu	Lys	Asn	Pro	Trp	Ile	Gly	Thr	Thr	Arg	Thr	Asn	Trp	Met
		290				295					300				
Asp	Glu	Ile	Phe	Arg	Thr	Ala	Phe	Tyr	Gln	Arg	His	Asn	Ile	Ala	Leu
305					310				315						320
Asn	Val	Gly	Thr	Asp	Asn	Tyr	Ser	Ser	Arg	Leu	Ser	Phe	Ser	Phe	Asp
				325					330					335	
Asn	Asp	Glu	Gly	Val	Leu	Ile	Asn	Thr	Tyr	Asn	Lys	Asn	Tyr	Ala	Ile
			340					345					350		
Arg	Tyr	Asn	Gly	Lys	Phe	Asp	Leu	Asn	Lys	Trp	Val	Ser	Ile	Ser	Glu
		355					360					365			
Asp	Leu	Val	Trp	Lys	Asn	Thr	Glu	Asn	Arg	Ser	Lys	Asp	Thr	Asn	Asp
		370				375					380				
Ala	Tyr	Thr	Gly	Pro	Val	Leu	Ser	Ala	Ile	Tyr	Met	Pro	Ala	Ser	Ala
385					390					395					400
Thr															

515	520	525
Thr Val Gly Ala Leu Phe Ser	Thr Thr Ala Asp His	Tyr Asn Val Arg
530	535	540
Gly Leu Lys Val Asn Gly Lys	Asn Phe Ala Asp Glu Ser	Pro Tyr Leu
545	550	555
Gln Tyr Leu Ala Tyr Ala Gly	Thr Thr Ser Ala Thr Asp	Tyr Leu Thr
565	570	575
Gly Pro Asp Ala Asn Val Ser	Leu Val Ala Arg Leu Ala	Tyr Ser Tyr
580	585	590
Asp Asp Arg Tyr Phe Val Thr	Ala Ser Trp Arg Arg Asp	Tyr Ala Gly
595	600	605
Arg Leu Pro Lys Glu Asn Asn	Phe Gly Asp Phe Pro Ala	Ala Thr Leu
610	615	620
Ala Trp Lys Ile Ser Asn Glu	Lys Phe Phe Lys Lys Ser	Asp Phe Ile
625	630	635
Gly Met Leu Lys Leu Arg Ala	Ser Trp Gly Arg Val Gly	Asn Leu Gly
645	650	655
Ser Ile Asp Tyr Asn Tyr Lys	Ser Leu Leu Leu Gly Thr	Ser Tyr Trp
660	665	670
Gln Glu Gln Ala Gln Tyr Gly	Val Ile Asn Asn Ala Thr	Trp Asn Asn
675	680	685
Phe Val Tyr Asn Ser Thr Ala	Met Asn Arg Asn Leu Thr	Trp Glu Thr
690	695	700
Ser Glu Gln Trp Asp Leu Gly	Leu Asp Val Glu Leu Phe	Lys Asn Arg
705	710	715
Leu Ala Leu Ser Phe Asp Tyr	Phe Asp Lys Arg Thr Phe	Asn Leu Ile
725	730	735
Gln Lys Gln Thr Met Asn Trp	Pro Ser Ser Ile Gly Leu	Asp Pro Leu
740	745	750
Leu Ile Asn Gln Gly Glu Ile	Arg Asn Arg Gly Ile Glu	Ile Gln Ala
755	760	765
Asn Trp Asn Asp Arg Val Asn	Lys Asp Phe Ser Tyr Phe	Val Ser Gly
770	775	780
Asn Phe Ser Tyr Leu Lys Asn	Cys Val Ser Asp Ile Gly	Val Lys Asn
785	790	795
Ala Asp Gly Ser Pro Gly Val	Trp Thr Asp Ser Asp Ser	Lys Phe Arg
805	810	815
Asn Ile Pro Tyr Thr Arg Gln	Thr Ala Glu Gly Glu Pro	Leu Asn Ser
820	825	830
Tyr Tyr Leu Ile Lys Thr Asp	Gly Ile Phe Gln Ser Asp	Ala Glu Ala
835	840	845
Ala Ala Tyr Val Asp Lys Asn	Gly Lys Arg Ile Gln Pro	Asn Ala Val
850	855	860
Ala Gly Asp Leu Lys Phe Ile	Asp Tyr Asn Asn Asp Gly	Lys Ile Asp
865	870	875
Asp Lys Asp Arg Gln Tyr Cys	Gly Ser Ala Thr Pro Lys	Ile Thr Tyr
885	890	895
Ser Phe Ser Phe Gly Ala Thr	Tyr Lys Lys Phe Ser Phe	Ser Ala Met
900	905	910
Phe Gln Gly Val Gly Gly Ala	Gln Ala Phe Tyr Ala Ala	Lys Ser Val
915	920	925
Ile Leu Ser Asp Ala Asp Gly	Asn Phe Asn Arg Val Lys	Asp Ile Leu
930	935	940
Asn Ala Trp Ser Pro Thr Asn	Thr Ser Ser Asn Ile Pro	Arg Leu Ser
945	950	955
Met Asn Asp Pro Asn Ser Asn	Phe Ser Thr Ala Ser Asp	Trp Tyr Leu
965	970	975
Glu Ser Ala Ser Tyr Leu Arg	Leu Lys Asn Leu Thr Leu	Ser Tyr Asp
980	985	990

Leu Thr Asp Val Leu Gln Lys Trp Ser His Leu Arg Glu Arg Asn Ser
 995 1000 1005
 Arg Met Ser Val Phe Phe Ser Gly Glu Asn Leu Phe Thr Ile Thr Asp
 1010 1015 1020
 Tyr Ser Gly Met Asp Pro Glu Cys Gly Gly Trp Asp Ala Met Lys Tyr
 1025 1030 1035 1040
 Pro Val Ser Arg Val Phe Ser Phe Gly Val Lys Leu Thr Tyr
 1045 1050

<210> 8236
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8236
 Phe Tyr Tyr Tyr His Ser Leu Ile Asn Leu Asn Tyr Val Tyr Tyr Cys
 1 5 10 15
 Ile Asn Phe Ser Phe Phe Leu Ser Val Asn Asn Val Gly Thr Val Ala
 20 25 30
 Ser Gly Ile Tyr Asn Val Met Pro Gln Cys Pro Ser Met Val Asn Pro
 35 40 45
 Pro Thr Leu Ser Gly Ile Lys Phe Ser Val Ala Ala Leu
 50 55 60

<210> 8237
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8237
 Tyr Phe Phe His Ile Cys Arg Leu Phe Asp Asn Tyr Ala Ala Leu Ser
 1 5 10 15
 Tyr Asn Glu Arg Glu Asn Asp Phe Ile Asn Ile Ile Ser Ile Tyr Asn
 20 25 30
 Thr Val Ser Tyr Phe Ile Ser His Leu Lys Met Phe Leu Ser Phe Phe
 35 40 45
 Ile Phe Arg Asn Lys Glu Lys Val Tyr Glu Cys Asn Thr Leu Ile Asn
 50 55 60
 Asn Thr Leu Leu Asn Ile Asp Ser Glu Thr Leu Ser Glu Thr
 65 70 75

<210> 8238
 <211> 250
 <212> PRT
 <213> B.fragilis

<400> 8238
 Cys Ile Ile Asn Gln Cys Ile Thr Phe Ile His Phe Phe Phe Val Ser
 1 5 10 15
 Glu Asn Lys Lys Thr Gln Lys His Phe Gln Met Gly Tyr Glu Val Thr
 20 25 30
 Tyr Cys Ile Ile Asn Ala Tyr Asn Ile Tyr Glu Val Ile Leu Pro Phe
 35 40 45
 Ile Ile Arg Lys Ser Arg Ile Ile Lys Gln Thr Thr Asn Met Lys
 50 55 60
 Lys Ile Leu Cys Ile Trp Val Leu Thr Val Thr Phe Leu Gly Ala Phe
 65 70 75 80
 Pro Ala Leu Ala Asp Ala Gln Gln Trp Gly Leu Thr Ala Asn Gly Leu
 85 90 95

Tyr Trp Ala Thr Ala Thr Pro Asn Ile Gly Val Glu Tyr Ala Phe His
 100 105 110
 Ser Lys Met Ser Ile Ala Gly Leu Val Gln Tyr Asn Pro Phe Thr Tyr
 115 120 125
 Ala Lys Asn Arg Lys Met Lys His Leu Ala Gly Gln Leu Glu Tyr Arg
 130 135 140
 Tyr Trp Leu Ser Asp Val Phe Lys Gly His Tyr Leu Gly Val His Ala
 145 150 155 160
 Thr Gly Gly Ile Phe Asn Phe Gly Asn Leu Pro Leu Gly Ile Leu Lys
 165 170 175
 Asp Tyr Arg Leu Glu Gly Gln Leu Tyr Gly Gly Gly Leu Thr Tyr Gly
 180 185 190
 Tyr Gln Trp Ile Ile Ser Asn Arg Val Asn Ile Gly Val Asp Ile Gly
 195 200 205
 Leu Gly Tyr Leu Tyr Val Asp Tyr Asp Lys Phe Tyr Cys Pro Thr Cys
 210 215 220
 Gly Glu Arg Val Asp His Tyr Arg Thr Asn Tyr Leu Gly Pro Thr Lys
 225 230 235 240
 Val Gly Val Ser Ile Ile Tyr Leu Leu Lys
 245 250

<210> 8239

<211> 391

<212> PRT

<213> B.fragilis

<400> 8239

Glu Arg Asp Asn Leu Val Lys Val Met Ile Thr Met Lys Asn Ile Leu
 1 5 10 15
 Arg Asn Phe Val Phe Ile Val Trp Ala Val Ala Leu Leu Pro Val Asn
 20 25 30
 Val Ser Ala Gln Asn Arg Arg Asp Lys Glu Gln Thr Tyr Val Leu Glu
 35 40 45
 Gln Pro Tyr Glu Val Thr Lys Ile Thr Pro Ser Gln Gly Lys Lys Ile
 50 55 60
 Lys Asn Val Ile Leu Met Ile Gly Asp Gly Met Ser Leu Met His Val
 65 70 75 80
 Tyr Ser Ala Trp Thr Ala Asn Arg Gly Lys Leu Phe Leu Asp Asn Cys
 85 90 95
 Gln Ala Val Gly Leu Ser Lys Thr Tyr Cys Ala Asp Lys Leu Ile Thr
 100 105 110
 Asp Ser Gly Ala Gly Gly Thr Ala Ile Ala Ser Gly Gln Lys Thr Asn
 115 120 125
 Tyr His Tyr Val Gly Val Asp Thr Leu Gly His Pro Leu Lys Ser Leu
 130 135 140
 Val Asp Phe Ala Ala Ala Lys Gly Lys Ser Thr Gly Ile Ala Val Thr
 145 150 155 160
 Cys Arg Leu Trp Asp Ala Thr Pro Ala Asp Phe Cys Cys His Asn Lys
 165 170 175
 Asp Arg Asp Ala Glu Ser Glu Ile Val Thr Asp Tyr Val Asn Cys Asn
 180 185 190
 Ala Asp Tyr Val Phe Gly Gly Gly Ala Lys Leu Phe Glu Asn Arg Glu
 195 200 205
 Asp Gly Arg Asp Leu Phe Lys Glu Leu Arg Glu Lys Gly Phe Arg Thr
 210 215 220
 Pro Arg Ser Trp Asp Glu Leu Ala Gly Ile Lys Ser Gly Lys Val Phe
 225 230 235 240
 Ala Val Pro Tyr Pro Val Asp Thr Pro Leu Pro Ala Glu Arg Gly Asp
 245 250 255

Leu Leu Ala Arg Ala Ser Leu Lys Gly Ile Asp Leu Leu Asn Gln Asn
 260 265 270
 Lys Asn Gly Phe Phe Met Met Ile Glu Gly Ser Gln Leu Asp Asp Tyr
 275 280 285
 Gly His Phe Asn Asp Leu Asp Leu Leu Met Gln Glu Thr His Asp Phe
 290 295 300
 Asp Arg Thr Ile Gly Ala Ile Tyr Glu Trp Ala Ala Lys Asp Gly Glu
 305 310 315 320
 Thr Leu Val Val Val Thr Ala Asp His Glu Thr Gly Gly Leu Thr Leu
 325 330 335
 Val Asp Gly Asp Leu Lys Glu Gly Lys Ile Val Cys Lys Phe Ser Thr
 340 345 350
 Gly Gly His Ser Gly Val Met Val Pro Val Tyr Ala Phe Gly Pro Gly
 355 360 365
 Ala Gln Glu Phe Thr Gly Ile Tyr Glu Asn Thr Ala Ile Phe Asp Lys
 370 375 380
 Ile Lys Lys Leu Leu Asp Leu
 385 390

<210> 8240

<211> 98

<212> PRT

<213> B.fragilis

<400> 8240

Lys Pro Leu Asn Gly Tyr Ala Met Lys Leu Ser Ile Asp Leu Gly Gly
 1 5 10 15
 Thr Asn Val Arg Ile Ala Gln Val Glu Asn Gly Ile Cys Leu Asn Lys
 20 25 30
 Met Ser Val Pro Cys Leu Ala Gln Gln Asp Ala Ser Ala Val Leu Asp
 35 40 45
 Gln Leu Phe Gln Leu Ile Thr Gly Met Met Asn Val Gln Val Asp Gly
 50 55 60
 Ile Gly Ile Gly Val Pro Ser Ile Val Asp Val Glu Lys Gly Ile Val
 65 70 75 80
 Tyr Asn Val Ala Asn Ile Ser Ser Trp Lys Lys Ile His Leu Lys Asp
 85 90 95
 Ile Leu

<210> 8241

<211> 407

<212> PRT

<213> B.fragilis

<400> 8241

Thr Lys Leu Lys Leu Phe Leu Ser Phe Ile Leu Ile Leu Pro Asp Thr
 1 5 10 15
 Met Ile Arg Leu Ile Leu Leu Thr Asp Phe Thr Glu Ser Phe Ser Tyr
 20 25 30
 Asn Leu Leu Lys Gly Val Leu Ala Tyr Ser Lys Lys His Glu Pro Trp
 35 40 45
 Val Val Cys Arg Met Pro Pro Ser Tyr Lys Leu Thr Tyr Gly Ile Glu
 50 55 60
 Gly Val Leu Lys Trp Ala Lys Ala Trp Gln Ala Asp Ala Ile Ile Gly
 65 70 75 80
 Arg Phe Asp Asn Asp Asp Asn Val Glu Leu Phe Arg Lys Asn Gly Ile
 85 90 95
 Ile Ala Ile Ala Gln Asp Tyr Lys Ser Arg Phe Ser Asn Ile Pro Asn

$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & i \\ 1 & -i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & -i \\ 1 & i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & 1 \\ i & -i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & -1 \\ i & i \end{pmatrix}$
$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & i \\ -1 & -i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & -i \\ -1 & i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & 1 \\ -i & i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & -1 \\ -i & -i \end{pmatrix}$

<213> B.fragilis

Gln	Arg	Ser	Lys	Ile	Ile	Leu	Leu	Ile	Phe	Ser	Ser	Ile	Val	Thr	Asn
1				5					10					15	
Leu	Ser	Ser	Ser	Asn	Pro	Thr	Thr	Ser	Arg	Gly	Ser	Ser	Ala	Thr	Pro
			20					25					30		
Ile	Tyr	Arg	Ser	Pro	Pro	Ala	Ser	Leu	Ala	Asn	Ala	Thr	Thr	Val	Leu
		35					40					45			
Ala	Lys	Ser	Glu	Cys	Ser	Gly	Asn	Ser	Ala	Leu	Asn	Ser	Asn	Leu	Arg
	50					55					60				
Pro	Ser	Asp	Trp	Phe	Ser	Ile	Ser	Phe	Met	Phe	Ile	Leu	Leu	Leu	Phe
65				70						75					80
Cys	Phe	Val	Ile	Asn	Leu	Trp	Gln	Val	Ile	Glu	Asn	Leu	Leu	Asp	Asp
				85					90					95	
Lys	Asp	Arg	Lys	Arg	Lys	His	Ser	Phe	Arg	Ser	Ile	Phe	Asn	Val	Ile

	100		105		110
Phe Tyr Leu Val Lys Thr Gly Cys Gln Trp Arg Met Leu Pro Cys Asp					
	115		120		125
Phe Ala Leu Trp Asn Thr Val					
	130		135		

<210> 8243
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 8243

Lys Asn Met Asn Ser Lys Tyr Leu Ser Leu Pro Lys Thr Lys Lys Tyr																			
1			5				10					15							
Ile Gln Lys Lys Tyr Leu Gln Phe Lys Glu Ile Arg Asn Pro Lys Arg							25				30								
			20																
Gln Thr Ile Tyr Phe Val Tyr Tyr Gly Thr Val Gly Cys Phe Ser Ile							40				45								
			35																
Gly Ile Ile Ala Asp Leu Cys Val Tyr Leu Ile Arg Lys Asp Leu Leu							55				60								
			50																
Leu Ala Leu Cys Asn Ile Leu Ser Leu Gly Leu Phe Leu Leu Phe Thr											75								
65						70													80
Tyr Leu Leu Ile Arg Lys Lys Lys Gln Ile Thr Phe Leu Leu Lys Cys											90								
						85													95
Thr Phe Tyr Thr Ile Gln Ser Asn Ile Leu Ile Ser Met Tyr Cys Arg																			
Ile Tyr Leu Pro Pro Glu Glu Thr Gly Phe Phe Leu Ser Gln Asp Leu																			
Met Ile Gly Met Val Thr Cys Gly Leu Ala Ser Ile Ser Val Ser Arg																			
His Thr Val Met Ile Leu Ser Phe Ala Pro Ile Leu Leu Tyr Met Phe																			
145						150					155								160
Ile Gly Val Tyr Thr Ser Ser Glu Leu Tyr Leu Met Ser Leu Pro Ser																			
Leu Ala Val Ala Tyr Ile Phe Pro Pro Ile Met Leu Ala Arg Leu Gln																			
Glu Ile Leu Arg Thr Met Gln Arg Gln Lys Ala Arg Met Thr Ser Glu																			
Leu Lys Leu Trp Ala Ala Phe Asn Ala Leu His Leu Gln Pro Ser Ser																			
Lys Glu Ile Gln Leu Cys Cys Leu Ile Leu Glu Asn Lys Thr Thr Glu																			
225						230					235								240
Glu Ile Ala Ala Leu Gln Tyr Ile Ala Thr Ser Thr Val Arg Ser Asn																			
Arg Ser Arg Leu Arg Gln Lys Leu Gln Leu Asn Gln Glu Thr Asp Leu																			
Gln Thr Phe Leu Ser Glu Leu Ile Lys Lys Asp Phe Asp Tyr Leu Glu																			
Ser Pro Asp																			
290																			

<210> 8244
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 8244

Lys Ile Ser Glu Gln Asp Glu Ser Leu Phe Ala Asp Ala Phe Arg Ile																			
1						5					10								15

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<210> 8245
<211> 397
<212> PRT
<213> B.fragilis
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Arg 1	Lys	Asn	Asp	Lys 5	Ala	Met	Lys	Asn	Met 10	Glu	Lys	Ser	Tyr	Lys 15	Arg
Ile	Leu	Leu	Leu	Gly	Ile	Gly	Phe	Ile	Leu	Cys	Gly	Thr	Leu	Ala	Ala
			20				25						30		
Gln	Glu	Gln	Lys	Gln	Asp	Ser	Thr	Glu	Gly	Lys	Asn	Asn	Ile	Lys	Ala
		35				40					45				
Ser	Glu	Tyr	Leu	Met	Pro	Lys	Arg	Lys	Gly	Ala	Glu	Lys	Phe	His	Ser
	50				55					60					
Lys	Arg	Gly	Ser	Glu	His	Leu	Phe	Phe	Ser	Val	Gly	Ser	Gly	Ile	Gly
65					70					75					80
Tyr	Leu	Phe	Asn	Val	Gly	Gly	Gly	Gln	Thr	Ala	His	Gly	Pro	Arg	Ala
			85						90					95	
Ser	Phe	Met	Ala	Gly	Asn	Trp	Leu	Thr	Pro	Val	Ile	Gly	Leu	Arg	Ala
			100					105					110		
Gly	Gly	Glu	Tyr	Thr	Gln	Trp	Lys	Gln	Gly	Asn	Thr	Asn	Met	His	Leu
		115					120					125			
Ala	Gly	Ala	Asn	Val	Asp	Tyr	Leu	Ile	Asn	Ile	Ser	Ala	Phe	Ala	Ala
	130				135						140				
Arg	Tyr	Asn	Pro	Lys	Arg	Val	Phe	Glu	Val	Ile	Gly	Ala	Leu	Gly	Leu
145				150						155					160
Ser	Tyr	Gln	Ala	Thr	Ile	Val	Lys	Asp	Gln	Lys	Thr	Ile	His	Ser	Tyr
			165						170					175	
Gly	Leu	Arg	Ala	Gly	Leu	Gln	Gly	Lys	Leu	Asn	Val	Ser	Ser	Ala	Phe
		180						185					190		
Asn	Leu	Phe	Ile	Glu	Pro	Gln	Leu	Ala	Leu	Tyr	Pro	Asp	Arg	Val	Asp
		195				200						205			
Asn	Gln	Ser	Ser	Trp	Lys	Arg	Tyr	Asn	Leu	Ala	Gly	Ser	Leu	Met	Ala
	210				215						220				
Gly	Ile	Thr	Tyr	Lys	Pro	Ala	Gly	Tyr	Ala	Thr	Leu	Thr	Phe	Leu	Lys
225				230						235					240
Gly	Gly	Phe	Ala	Ser	Leu	Ala	Ala	Gly	Thr	Gly	Asn	Thr	Gly	Asn	Val
			245						250					255	
Leu	Phe	Asp	Thr	Glu	Phe	Ala	Leu	Gly	Lys	Trp	Phe	Asp	Lys	Phe	Asn
		260						265					270		
Gly	Met	Arg	Ile	Ser	Ala	Gly	Ser	Ser	Thr	Ala	Phe	Leu	Asp	Asn	Glu
		275					280						285		
Asp	Ser	Gly	Ser	Asn	Arg	Asp	Phe	Asn	Ile	Ser	Leu	Asn	Ile	Asp	Tyr
	290				295						300				
Leu	Cys	Ser	Leu	Thr	Arg	Leu	Phe	Ser	Asp	Arg	Asp	Ser	His	Val	Phe
305				310						315					320
Asn	Leu	Ile	Val	Ala	Gly	Gly	Ile	Gly	Ser	Tyr	Phe	Pro	Gly	Ala	Glu
			325						330					335	

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Ser Ser Ser Ser Ile Ile Leu Asn Gly Arg Ile Gly Leu Gln Gly Glu
 340 345 350
 Ile Arg Leu Ser Ala His Ser Gly Leu Trp Leu Glu Pro Arg Ile Asn
 355 360 365
 Ile Phe Lys Asp Arg Ser Tyr Arg Ala Asp Leu Gln Glu Pro Ile Arg
 370 375 380
 Gly Thr Val Gly Leu Met Val Gly Thr Thr Tyr Lys Phe
 385 390 395

<210> 8246

<211> 143

<212> PRT

<213> B.fragilis

<400> 8246

Asn Ile Phe Leu Gln Lys Ser Ser Cys Asp Gly Leu Leu Pro Gly Ser
 1 5 10 15
 Arg Leu His Arg Leu Glu Asp Asn Thr Ile Ala Leu Leu Thr Phe Gly
 20 25 30
 Lys Lys Asp Gly Lys Glu Ala Met Phe Phe Phe Arg Met Asn Pro Asn
 35 40 45
 Thr Thr Gly Ala Lys Asn Arg Ala Lys Arg Ile Ala Ala Cys Ile Arg
 50 55 60
 Asn Phe Asp Arg Lys Cys Glu Glu Gln Leu Phe Ser Arg Arg Trp Gly
 65 70 75 80
 Ile Ser Phe Val Ser Ala Thr Gly Leu His Ser Gly Ile Pro Leu Val
 85 90 95
 Phe Ala Asn Lys Val Asn Lys Pro Val Ala Asp Tyr Leu Lys Glu Asn
 100 105 110
 Arg Lys Arg Asn Cys Gly Ile Val Phe Ile Asp Phe Ile Glu Ser Ser
 115 120 125
 Gly Gly Gln Lys Leu Val Glu Tyr Leu Ile Gly Gly Asn Ile Tyr
 130 135 140

<210> 8247

<211> 184

<212> PRT

<213> B.fragilis

<400> 8247

Ser Gly Ala Asp Gly Lys Ser Ala Pro Val Asp Ile Phe Phe Leu Ser
 1 5 10 15
 Glu Arg Glu Glu Tyr Glu Thr Lys Met Lys Lys Leu Leu Pro Ile Leu
 20 25 30
 Leu Gly Val Thr Leu Leu Leu Asn Ser Cys Ile Lys Asp Asp Met Asp
 35 40 45
 Ala Cys Ala Gly Tyr Met His Ile Tyr Phe Ser Tyr Ile Tyr Gly Gly
 50 55 60
 Ala Asn Arg Phe Phe Glu Thr Val Ser Thr Pro Thr Gln Leu His Phe
 65 70 75 80
 Tyr Lys Gln Lys His Lys Tyr Arg Glu Leu Glu Ile Ala Val Asp Glu
 85 90 95
 Ile Gly Leu Thr Glu Pro Tyr Arg Phe Leu Lys Asn Phe Asp Asp Thr
 100 105 110
 Asp Ser Leu Glu Leu Ile Ala Trp Thr Gln Asp Glu Ala Ile Asp Tyr
 115 120 125
 Val Asp Thr Pro Asp Thr Pro Ile Gly Glu Gly Tyr Val Lys Leu Lys
 130 135 140
 Glu Ile Thr Asp Gly Ser Gly Ile Cys Arg Pro Val Asp Asp Leu Leu

145 150 155 160
 Tyr Gly Arg Ile Ala Ile Asp Ala Gly Leu Arg Glu Asn Arg Ser Ser
 165 170 175
 Pro Arg Gly Trp Lys Asp Gln Gln
 180

<210> 8248
 <211> 565
 <212> PRT
 <213> B.fragilis

<400> 8248
 Lys Tyr Lys Leu Phe Glu Leu Ile Ser Ile Ile Lys Phe Phe Ser Asn
 1 5 10 15
 Met Lys Leu Asn Lys Leu Phe Thr Phe Thr Leu Ala Ala Leu Ala Met
 20 25 30
 Ala Ala Cys Ser Asn Asp Asp Glu Pro Gly Ile Asp Lys Gly Gly Gln
 35 40 45
 Lys Gly Glu Leu Ile Asp Ala Ile Ser Ile Ala Phe Thr Ser Ser Ser
 50 55 60
 Ala Pro Ala Thr Arg Ala Asp Lys Gly Glu Ile Glu Gly Val Gly Thr
 65 70 75 80
 Glu Asn Asn Val Tyr Val Ala Tyr Leu Phe Ala Lys Glu Asn Asp Pro
 85 90 95
 Gln His Glu Gly Ala Lys Val Gly Asp Trp Thr Val Lys Arg Val Ala
 100 105 110
 Gly Asp Ala Asn Thr Glu Asp Lys Asp Val Ala Ala Ala Ile Gly Glu
 115 120 125
 Gly Asp Val Ala Thr Pro Gly Thr Lys Lys Asn Met Cys Thr Phe Asn
 130 135 140
 Gly Val Arg Gln Gly Asp Ser Val Tyr Val Val Val Asn Asp Pro Gln
 145 150 155 160
 Met Thr Leu Ala Thr Ala Gln Thr Leu Ala His Gln Gly Asp Lys Ser
 165 170 175
 Glu Ala Ala Ile Arg Ala Tyr Ile Ser Asn Leu Ser Lys Ser Tyr Leu
 180 185 190
 Asn Glu Leu Thr Val Thr Lys Asp Gly Thr Gln Gly Lys Lys Tyr Ile
 195 200 205
 Met Ala Gly Val Ser Ala Ile Pro Thr Asn Pro Asn Ile Pro Asn Gly
 210 215 220
 Ser Thr Val Lys Val Ser Ile Pro Leu Asn Arg Glu Leu Ala Lys Val
 225 230 235 240
 Phe Phe Asn Ala Ser Val Thr Thr Asn Pro Val Tyr Glu Ala Tyr Gly
 245 250 255
 Lys Met Ala Ile Lys Asp Ala Glu Trp Glu Asn Pro Thr Gly Thr Lys
 260 265 270
 Asp Pro Asp Gly Ile Val Val Val Arg Ile Pro Arg Arg Val Ser Pro
 275 280 285
 Phe Thr Ala Gln Ala Arg Asp Trp Tyr Phe Pro Gln Ser Ala Asp Ala
 290 295 300
 Thr Ala Lys Asp Trp Asp Val Glu Gly Trp Leu Lys Ala Phe Ala Gly
 305 310 315 320
 Glu Lys Glu Ser Ala Pro Gly Thr Ala Glu Val Ala Gly Thr Thr Ser
 325 330 335
 Ala Leu Asn Lys Gly Glu Tyr Asn Ala Asp Ala Lys Glu Tyr Arg Leu
 340 345 350
 Thr Trp Val Val Gly Glu Lys Ala Leu Ala Asp Gly Ala Thr Pro Ala
 355 360 365
 Ala Ala Ser Met Val Tyr Val Lys Ser Asp Lys Leu Tyr Ser Pro Tyr

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370		375		380
Phe Tyr Val Thr Pro Asn Tyr Ala Asp Asn Ala Gly Cys Ala Thr Val				
385		390		400
Val Val Thr Gln Ala Thr Tyr Ile Gly Ala His Thr Leu Leu Glu Pro				
	405		410	415
Thr Ile Thr Glu Gln Met Leu Lys Glu Ala Leu Asp Asp Ser Asp Phe				
	420		425	430
Gln Thr Ala Thr Ser Thr Asp Gly Ser Val Thr Tyr Asp Lys Leu Ala				
	435		440	445
Ala Asn Phe Trp Asp Thr Gly Ala Asn Val Thr Ala Leu Val Thr Phe				
	450		455	460
Leu Glu Lys Asp Ala Thr Tyr Lys Leu Ala Leu Arg Gly Glu Thr Glu				
465		470		480
Gln Ala Lys Lys Glu Ala Ala Ile Thr Ile Lys Pro Asn Asp Lys Arg				
	485		490	495
Tyr Tyr Arg Ala Asp Val Ala Asn Tyr Ser Asp Asp Glu Thr Thr Ser				
	500		505	510
Met Lys Ile Thr Glu Arg Asn Thr Phe Tyr His Ile Thr Gly Thr Ile				
	515		520	525
Thr Thr Leu Gly Ala Lys Ser Ile Glu Asp Ala Ile Asn Ser Asp Asn				
	530		535	540
Ile Asp Met Leu Val Gln Val Val Val Lys Pro Trp Lys Tyr Val Val				
545		550		560
Asn Asn Ile Asn Met				
	565			

<210> 8249
 <211> 391
 <212> PRT
 <213> B.fragilis

<400> 8249

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Met Trp Leu Arg Asp Ser Ser Ala Gln Val Trp Pro Tyr Leu Pro Leu				
	20	25	30	
Met Lys Asp Asp Lys Glu Leu Gln Leu Leu Ile Ala Gly Leu Ile Asn				
	35	40	45	
Arg Gln Ala Glu Cys Ile Arg Ile Asp Pro Tyr Ala Asn Ala Phe Asn				
	50	55	60	
Asp Gly Pro Leu Gly Ser Tyr Trp Glu Thr Asp His Thr Gln His Met				
65	70	75	80	
Val Lys Glu Leu His Glu Arg Lys Trp Glu Ile Asp Ser Leu Cys Tyr				
	85	90	95	
Pro Ile Arg Leu Ala Tyr His Tyr Trp Leu Leu Thr Lys Asp Ile Ser				
	100	105	110	
Ala Phe Asp Ala Asp Trp His Glu Thr Met Lys Leu Val Val Gln Thr				
	115	120	125	
Phe Lys Glu Gln Gln Arg Lys Gln Gly Leu Gly Pro Tyr Ser Phe Thr				
	130	135	140	
Arg Asp Cys Asp Arg Pro Thr Asp Ser Gln Ile Asn Asn Gly Trp Gly				
145	150	155	160	
Ala Pro Val Lys Pro Val Gly Leu Ile Val Ser Ser Phe Arg Pro Ser				
	165	170	175	
Asp Asp Ala Thr Gln Tyr Gly Phe Leu Ile Pro Ser Asn Met Phe Ala				
	180	185	190	
Val Val Ser Leu Arg Gln Leu Ala Glu Ile Glu Arg Glu Val Tyr Asp				
	195	200	205	
Asn Leu Pro Phe Ala Glu Glu Cys Thr Ala Leu Ala Asp Glu Val Asp				

210	215	220
Ala Ala Ile Arg Arg Tyr Gly Thr Phe Asn His Pro Val Cys Gly Arg		
225	230	235
Ile Tyr Ala Phe Glu Val Asp Gly Phe Gly Asn Ala Leu Cys Met Asp		240
	245	250
Asp Ala Asn Val Pro Cys Leu Leu Ala Ala Pro Tyr Leu Gly Tyr Cys		255
	260	265
Ser Phe Lys Asp Ala Val Tyr Arg Asn Thr Arg Lys Met Ile Trp Ser		270
	275	280
Glu Asn Asn Pro Tyr Phe Phe Lys Gly Lys Ala Gly Glu Gly Val Gly		285
	290	295
Gly Pro His Val Gly Leu Asn Tyr Ile Trp Pro Met Ser Ile Ile Met		300
305	310	315
Lys Ala Phe Thr Thr Asp Ala Pro Glu Glu Ile Arg Ser Cys Leu Lys		320
	325	330
Gln Leu Arg Asp Thr Asp Gly Gly Thr Gly Phe Met His Glu Ser Phe		335
	340	345
Asn Ser Glu Asn Ala Ala Asp Phe Thr Arg Ser Trp Phe Ala Trp Thr		350
	355	360
Asn Thr Leu Phe Gly Glu Leu Ile Leu Lys Ile Ile Arg Glu Tyr Pro		365
	370	375
Gly Leu Leu Ser Gln Ala Leu		380
385	390	

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 <213> B.fragilis

<400> 8250
Glu Val Thr Arg Glu Asn Pro Val Leu Ser Ala Ala Phe Gln Gly Glu
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Lys Arg Leu Leu Ser Ile Ile Tyr Arg Leu Ala Ala Asp Lys Lys Leu
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Thr Ser Tyr Lys Gln Arg Ile Asn Phe Leu Pro Ala Lys Asn Glu Leu
35 40 45
Phe Ala Thr Thr Leu Phe Thr Ser Tyr Gly Gln Lys Ser Glu
50 55 60

<210> 8251
 <211> 207
 <212> PRT
 <213> B.fragilis

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Pro Asn Leu Leu Trp Glu Ile Ala Gly Tyr Asn Phe Pro Ser Leu Phe
20 25 30
Gly Lys Arg Ala Ile Leu Phe Ile Phe Ile Ala Ile Ser Phe Gln Val
35 40 45
Ser Ala Gln Arg Met Ala Ile Lys Thr Asn Thr Leu Glu Trp Leu Ala
50 55 60
Ala Ser Pro Asn Leu Gly Val Glu Phe Pro Leu Asn Asp Trp Met Thr
65 70 75 80
Ala Glu Ile Ser Ala Ser Ala Asn Pro Trp Lys Ile Thr Asp Lys Leu
85 90 95
Phe Tyr Arg His Gly Arg Ile Gln Ala Glu Ala Lys Tyr Trp Leu Arg
100 105 110

Asn	Leu	Leu	Ala	Arg	His	Tyr	Ile	Gly	Ile	Thr	Gly	Phe	Tyr	Ser	Met
	115						120					125			
Phe	Asp	Val	Gly	Ile	Asn	Arg	Arg	Ala	Tyr	Tyr	Gly	Asp	Ala	Ala	Ala
	130					135					140				
Ala	Gly	Val	Thr	Tyr	Gly	Tyr	Asn	Trp	Ile	Leu	Ser	Arg	Arg	Trp	Asn
	145				150					155					160
Leu	Glu	Val	Ser	Gly	Gly	Val	Gly	Val	Ala	Arg	Tyr	Arg	Leu	Val	Arg
			165						170					175	
Tyr	Gln	Pro	Gly	Ser	Thr	His	Asp	Glu	Pro	Asn	Glu	Ser	Gly	Trp	Ala
		180						185					190		
Pro	Ile	Pro	Val	Lys	Leu	Ser	Val	Ser	Phe	Ile	Tyr	Ile	Ala	Lys	
	195						200					205			

<210> 8252

<211> 376

<212> PRT

<213> B.fragilis

<400> 8252

Ser	Arg	Gly	Gly	Gln	Ala	Met	Asn	Ile	Lys	Gln	Val	Ile	Phe	Ile	Asn
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Ile	Ser	Phe	Phe	Ile	Ser	Leu	Thr	Val	Leu	Ala	Ala	Asp	Arg	Pro	Thr
		20						25					30		
Gln	Pro	Val	Arg	Thr	Glu	Val	Tyr	Arg	Leu	Glu	Arg	Leu	Asp	Ser	Val
		35					40					45			
Leu	Leu	Val	Asp	Leu	Ala	Val	Asp	Leu	Thr	Gly	Val	His	Leu	Ala	Pro
	50					55					60				
Asp	Cys	Thr	Val	Tyr	Leu	Phe	Pro	Leu	Leu	Ala	Ser	Glu	Asn	Thr	Gly
65					70					75					80
Asp	Ser	Leu	Ser	Leu	Pro	Pro	Ile	Val	Leu	Asn	Gly	Pro	Gln	Ser	Asp
			85					90					95		
Leu	Met	Tyr	Arg	Arg	Arg	Arg	Ala	Leu	Gly	Thr	Thr	Ser	Gly	Leu	Glu
			100					105					110		
Lys	Ile	Thr	Pro	Tyr	Thr	Val	Leu	Arg	Glu	Gly	Asp	His	Ala	Leu	Pro
		115					120					125			
Arg	Ile	His	Tyr	Arg	Thr	Glu	Val	Pro	Tyr	Ala	Ala	Trp	Met	Asp	Asp
	130					135					140				
Val	Lys	Val	Trp	Met	Arg	Asp	Thr	Asn	Cys	Asn	Cys	Asp	Ala	Arg	Leu
	145				150					155					160
Val	Pro	Phe	Ala	Met	His	Thr	Glu	His	Ile	Pro	Pro	Leu	Val	Val	Glu
			165						170					175	
Arg	Val	Asp	Thr	Ile	Val	Ile	His	Asp	Thr	Ile	Arg	Leu	Ala	Ser	Val
		180						185					190		
Ala	Ser	Gly	Gln	Ser	Thr	Val	Ala	Ser	Asp	Ile	Pro	Leu	Arg	Lys	Lys
		195					200					205			
Val	Thr	Arg	Ile	Gln	Ala	Gly	Tyr	Glu	Ala	Asp	Ile	Tyr	Phe	Pro	Thr
	210					215					220				
Asn	Glu	Met	Arg	Ile	Leu	Pro	Asp	His	Glu	Leu	Asn	Arg	Ala	Ser	Trp
	225				230					235					240
Met	His	Phe	Val	Asn	Gln	Val	Asp	Ser	Ile	Glu	Gln	Asp	Asn	Arg	Asn
			245						250					255	
Ser	Ile	Ser	Gly	Val	Thr	Val	Thr	Gly	Tyr	Ser	Ser	Pro	Glu	Gly	Tyr
		260						265					270		
Thr	Ser	Asn	Asn	Glu	Arg	Leu	Ala	Glu	Lys	Arg	Ala	Lys	Ala	Leu	Gln
		275					280					285			
Ala	Phe	Leu	Glu	Asn	Lys	Tyr	Gly	Glu	Arg	Met	Glu	Val	Ala	Val	Glu
	290					295					300				
Trp	Val	Gly	Glu	Asp	Trp	Lys	Gln	Phe	Glu	Lys	Asp	Ile	Glu	Val	Ser
	305				310					315					320

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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<210> 8254
<211> 381
<212> PRT
<213> B.fragilis
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<400> 8254															
Asn	Lys	Asn	Met	Lys	Arg	Met	Tyr	Tyr	Ile	Gly	Tyr	Met	Leu	Cys	Leu
1				5					10					15	
Leu	Leu	Ala	Gly	Cys	Val	Val	Gly	Glu	Glu	Ala	Asp	Gly	Leu	Leu	Glu
			20					25					30		
Gln	Arg	Leu	Ser	Asp	Arg	Thr	Leu	Leu	Val	Tyr	Met	Gly	Gly	Asp	Asn
		35					40					45			
Asp	Leu	Ala	Asp	Glu	Thr	Asp	Glu	Lys	Leu	Ser	Ala	Leu	Thr	Glu	Ala
	50					55					60				
Trp	Asp	Arg	Phe	Pro	Gly	His	Leu	Leu	Ile	Tyr	Gln	Asp	Lys	Lys	Gly
65					70					75					80
Ala	Asp	Ser	Thr	Arg	Leu	Leu	Glu	Val	Cys	Leu	Asp	Glu	Gln	Gly	Glu

			85				90				95				
Lys	Val	Thr	Lys	Ile	Leu	Ala	Lys	Tyr	Lys	Gln	Glu	Asn	Ser	Ala	Gly
			100						105				110		
Ala	Ser	Val	Phe	Ala	Arg	Val	Val	Asn	Glu	Ala	Met	Ala	Arg	Tyr	Pro
			115						120				125		
Ser	Val	Asp	Pro	Gly	Leu	Ile	Val	Phe	Ser	His	Thr	Ser	Gly	Trp	Leu
			130						135				140		
Pro	Ser	Gly	Thr	Ala	Val	Val	Pro	Ala	Gly	Ile	Thr	Arg	Ser	Val	Ile
			145						150						160
Lys	Asp	Asn	His	Tyr	Glu	Met	Ser	Leu	Gln	Asp	Phe	Ala	Ser	Ala	Ile
				165					170						175
Pro	Asp	Gly	Gln	Phe	Asn	Phe	Ile	Leu	Phe	Glu	Gly	Cys	Phe	Met	Ala
			180						185						190
Gly	Leu	Glu	Val	Ala	Tyr	Glu	Leu	Lys	Asp	Lys	Thr	Gln	Tyr	Ile	Val
			195						200						205
Gly	Ser	Ser	Ala	Glu	Met	Leu	Ser	Pro	Gly	Phe	Thr	Pro	Val	Tyr	Gln
			210						215						220
Gln	Met	Phe	Pro	Leu	Leu	Tyr	Lys	Lys	Glu	Ala	Asp	Leu	Pro	Ala	Val
				225											230
Ala	Ala	Ala	Tyr	Tyr	Asp	Tyr	Tyr	Asn	Ser	Met	Glu	Gly	Asp	Asn	Arg
				235											240
Ser	Ala	Thr	Ile	Ser	Val	Ile	Gln	Thr	Ser	Gly	Leu	Glu	Met	Leu	Lys
			245						250						255
Val	Gln	Leu	Arg	Ala	Ala	Glu	Ser	Arg	Val	Glu	Arg	Trp	Glu	Trp	Ile
			260						265						270
Asp	Arg	Ser	Gly	Leu	Gln	Ala	Phe	Asp	Arg	Leu	Ser	Asp	Gly	Arg	His
			275						280						285
Leu	Phe	Tyr	Asp	Ala	Ser	Ala	Tyr	Ile	Lys	Arg	Ile	Gly	Ser	Val	Glu
				290					295						300
Glu	Ser	Ala	Ala	Phe	Asp	Glu	Ala	Leu	Glu	Gln	Val	Ile	Ile	Tyr	Lys
				305					310						315
Ala	Ala	Thr	Glu	Asn	Phe	Met	Pro	Glu	Ser	Val	Gly	Gly	Phe	Thr	Ile
				320					325						330
Asp	Gly	His	Cys	Gly	Met	Thr	Leu	Tyr	Ile	Pro	Asp	Ala	Thr	Val	Pro
				335					340						345
Thr	Leu	Leu	Thr	Glu	Arg	Lys	Lys	Leu	Lys	Leu	Met	Gln			
				350					355						360
				365											370
				375											380

<210> 8255

<211> 61

<212> PRT

<213> B.fragilis

<400> 8255

Ser	Gly	Cys	Ile	Val	Phe	Thr	Gln	Tyr	Cys	Phe	Leu	Phe	Ala	Gln	Lys
1				5					10					15	
Ser	Phe	Phe	Phe	Val	Thr	His	Thr	Leu	Phe	Phe	Ser	Phe	Val	Ile	Glu
				20				25					30		
Val	Val	Tyr	Cys	Ile	Tyr	Met	Gln	Lys	Glu	Asn	Val	Phe	Glu	Ser	Leu
				35			40						45		
Asn	Asn	Met	Leu	Phe	Thr	Phe	Leu	Pro	Ile	Gly	Ser	Glu			
				50			55					60			

<210> 8256

<211> 481

<212> PRT

<213> B.fragilis

<400> 8256

Lys Asn Gly Ile Ala His Leu Gln His Pro Glu Lys Gly Arg Cys Cys
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 Lys Asn Ala Thr Leu Ile Phe Arg Leu Ser Ser Gly Arg Arg Leu His
 20 25 30
 Leu Ser Tyr Pro Leu Trp Arg Glu Met Gln Thr Lys Cys Ile Arg Leu
 35 40 45
 Phe Lys Ile Val Lys Leu Gly Ser Cys Gln His Ile Asp Ser Arg Cys
 50 55 60
 Cys Phe Thr Phe Val Asn Gln Leu Lys Val Lys Lys Met Thr Ser
 65 70 75 80
 Ile Thr Pro Arg Leu Asn Arg Ser Arg Glu Gly Arg Asp Gly Ser Tyr
 85 90 95
 Pro Leu Val Ile Gln Ile Ile Arg His Arg Lys Lys Arg Glu Ile Tyr
 100 105 110
 Thr Pro Tyr Arg Phe Trp Glu Ala Glu Phe Asn Thr Arg Leu Glu Met
 115 120 125
 Val Glu Asn Val Gly Gly Asn Arg Arg Arg Leu Leu Ile Val Arg Glu
 130 135 140
 Ala Asn Glu Tyr Leu Ile Tyr Ile Lys Lys Glu Leu Glu Ala Ile Cys
 145 150 155 160
 Arg Ser Leu Glu Ala Asp Lys Gly Ser Ala Tyr Thr Val Asp Asp Ile
 165 170 175
 Val Asn Val Tyr Asn Tyr His Asn Asp Leu Ser Gln Val Leu Val Tyr
 180 185 190
 Ala Asp Ser Val Ile Ala Gly Leu Glu Asn Lys Gly Arg Gln Gly Thr
 195 200 205
 Ala Ala Asn Tyr Arg Ser Ala Arg Arg Ala Phe Glu Met Phe Leu Asp
 210 215 220
 Gly Arg Pro Phe Ser Phe Glu Glu Leu Thr Pro Glu Val Leu Asp Arg
 225 230 235 240
 Phe Val Thr Phe Leu Arg Glu Arg Gly Asn Arg Pro Asn Thr Val Ser
 245 250 255
 Phe Tyr Leu Arg Gln Trp Arg Ala Ile Tyr Asn Arg Ala Cys Ala Asp
 260 265 270
 His Val Val Phe Ser Asp Gln Lys Pro Phe Arg Arg Leu Asn Leu Lys
 275 280 285
 Glu Glu Val Thr Ser Lys Arg Ala Ile Ser Arg Glu Lys Ile Ala Gln
 290 295 300
 Ile Glu Cys Val Asp Leu Thr Ala Cys His Ala Asp Met Gln Leu Ala
 305 310 315 320
 Arg Asp Leu Phe Leu Phe Ser Phe Tyr Thr Arg Gly Met Ser Phe Val
 325 330 335
 Asp Met Cys Tyr Leu Asn Lys Glu Asn Leu Gln Gly Asn Tyr Leu Arg
 340 345 350
 Tyr Lys Arg Gln Lys Thr Gly Gln Glu Leu Gln Ile Arg Ile Glu Lys
 355 360 365
 Asp Leu Arg Val Leu Ile Asp Arg Tyr Ala Ser Pro Leu Ser Asp Tyr
 370 375 380
 Leu Leu Pro Met Leu Arg Asn Gly Asp Arg Tyr Gln Asp Tyr Arg Arg
 385 390 395 400
 Arg Gln Arg Arg Leu Asn Lys Leu Ile Arg Glu Leu Gly Asp Arg Leu
 405 410 415
 Gln Leu Asp Met Pro Leu Thr Phe Tyr Val Ala Arg His Ser Trp Ala
 420 425 430
 Thr Leu Ala His Glu Asn Asp Val Pro Val Ser Val Ile Ser Asp Cys
 435 440 445
 Met Gly His Thr Ser Glu Lys Thr Thr Arg Ile Tyr Leu Asp Arg Ile
 450 455 460
 Asp Thr Lys Arg Leu Asp Arg Ala Asn Arg Leu Val Ile Asn Ser Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

465
Arg

470

475

480

<210> 8257
<211> 290
<212> PRT
<213> B.fragilis

<400> 8257

His	Asn	Ala	Met	Glu	Lys	Ile	Ile	Leu	Leu	Val	Leu	Pro	Phe	Phe	Ala
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Ala	Ser	Cys	Gly	Leu	Val	Lys	Gln	Gln	Ala	Ser	Ala	Pro	Glu	Pro	Val
			20					25					30		
Asn	Val	Met	Ser	Phe	Asn	Ile	Arg	Tyr	Asp	Asn	Pro	Glu	Asp	Ser	Leu
		35					40					45			
Asp	Asn	Trp	Arg	Tyr	Arg	Lys	Asp	Arg	Val	Ala	Asn	Ala	Ile	His	Phe
	50					55					60				
Tyr	Asp	Val	Asp	Ile	Leu	Gly	Thr	Gln	Glu	Val	Leu	His	Asn	Gln	Leu
65					70				75					80	
Glu	Asp	Leu	Lys	Leu	Arg	Leu	Pro	Glu	Tyr	Gly	Val	Val	Gly	Val	Gly
			85					90						95	
Arg	Glu	Asp	Gly	Lys	Glu	Lys	Gly	Glu	Tyr	Ser	Ala	Leu	Trp	Tyr	Lys
			100					105						110	
Lys	Asp	Arg	Phe	Asn	Val	Leu	Asp	Ser	Gly	Tyr	Phe	Trp	Leu	Ser	Glu
		115					120					125			
Thr	Pro	Glu	Val	Ala	Gly	Ser	Lys	Gly	Trp	Asp	Gly	Ala	Cys	Glu	Arg
	130						135				140				
Ile	Ala	Ser	Trp	Val	Lys	Leu	Gln	Asp	Lys	Val	Ser	Asp	Lys	Glu	Tyr
145					150					155				160	
Phe	Ala	Leu	Asn	Thr	His	Leu	Asp	His	Val	Gly	Gly	Met	Ala	Arg	Arg
				165					170					175	
Glu	Gly	Ile	Ser	Leu	Met	Leu	Asp	Arg	Val	Asn	Glu	Leu	Ser	Asp	Gly
			180					185					190		
Leu	Pro	Val	Ile	Val	Thr	Gly	Asp	Phe	Asn	Ser	Glu	Pro	Glu	Ser	Asp
		195					200					205			
Val	Ile	Lys	His	Val	Thr	Asp	Ser	Ala	Asn	Pro	Glu	His	Leu	Thr	Asp
	210					215					220				
Ala	Arg	Gln	Ala	Ser	Ser	Ile	Val	Tyr	Gly	Pro	Ser	Trp	Ser	Phe	His
225					230					235				240	
Asp	Phe	Gly	Lys	Ile	Pro	Tyr	Asn	Lys	Arg	Pro	Leu	Ile	Asp	Tyr	Val
			245						250					255	
Phe	Val	Arg	Asn	Gly	Leu	Lys	Val	Leu	Arg	Tyr	Gly	Ile	Leu	Ala	Glu
			260					265					270		
Thr	Glu	Asn	Asn	Gly	Phe	Leu	Ser	Asp	His	Thr	Pro	Val	Leu	Val	Thr
		275					280						285		
Val	Glu														
	290														

<210> 8258
<211> 389
<212> PRT
<213> B.fragilis

<400> 8258

Thr	Lys	Thr	Ile	Phe	Pro	Met	Leu	Lys	His	Ile	Leu	Phe	Thr	Cys	Phe
1				5					10					15	
Phe	Phe	Phe	Thr	Ala	Ile	Pro	Leu	Leu	Lys	Ala	Gln	Gly	Cys	Gly	Asn
			20					25					30		

Asp Glu Lys Tyr His Leu Pro Tyr Lys Asn Thr Tyr Val Lys Glu Pro
 35 40 45
 Leu Val Ala Glu Asn Glu Tyr Arg Ile Ala Lys Pro Glu Thr Val Glu
 50 55 60
 Pro Lys Ser Phe Glu Glu Ala Arg Gln Ile Leu Pro Asn Pro Ile Trp
 65 70 75 80
 Ala Gly His Glu Lys Glu Leu Glu Met Tyr Trp Arg Ala Trp Glu Ile
 85 90 95
 Ala Val Gly Asn Ile Arg Ala Pro Gln Gln Gly Ser Gly Phe Val Ser
 100 105 110
 Ser Tyr Leu Asp Thr Ala Tyr Asn Gly Asn Ile Phe Met Trp Asp Ser
 115 120 125
 Ser Phe Ile Leu Met Phe Ala Arg Tyr Gly Thr Arg Phe Phe Pro Phe
 130 135 140
 Gln Arg Thr Leu Asp Asn Phe Tyr Ala Lys Gln His Pro Asp Gly Phe
 145 150 155 160
 Ile Cys Arg Glu Ile Lys Ala Asp Gly Ala Asp Cys Phe Glu Arg Tyr
 165 170 175
 Asp Pro Val Ser Thr Gly Pro Asn Leu Met Pro Trp Cys Glu Met Val
 180 185 190
 Tyr Tyr Tyr Gln Phe Gly Asp Thr Glu Arg Leu His Lys Ile Phe Pro
 195 200 205
 Val Leu Cys Ala Tyr Tyr Lys Trp Leu Lys Leu Asn Arg Thr Trp Arg
 210 215 220
 Asn Gly Thr Tyr Trp Ser Ser Gly Trp Gly Thr Gly Met Asp Asn Met
 225 230 235 240
 Pro Arg Val Pro Glu Gly Tyr Ser Pro Ile Tyr Ser His Gly His Met
 245 250 255
 Ile Trp Leu Asp Thr Asn Leu Gln Gln Leu Phe Thr Ala Asn Leu Leu
 260 265 270
 Leu Glu Met Gly Phe Tyr Leu Glu Arg Trp Gln Glu Ile Glu Glu Phe
 275 280 285
 Glu Asp Glu Ala Lys Met Leu Gly Lys Tyr Ile His Asp Asn Leu Trp
 290 295 300
 Asp Glu Lys Thr Gly Phe Leu Tyr Asp Gln Tyr Ala Asp Gly Thr Leu
 305 310 315 320
 Cys Lys Thr Lys Gly Ile Gly Ala Tyr Trp Thr Leu Leu Thr Asp Val
 325 330 335
 Leu Asp Asp Lys Gln Leu Asp Arg Met Val Lys Glu Leu Asp Asn Pro
 340 345 350
 Ala Thr Phe Ile Gly Asn Phe Val Phe Pro Leu Cys Arg Gln Ile Ile
 355 360 365
 Leu Ser Ile Lys Arg Thr Gly Val Ile Gly Lys Val Ala Tyr Gly Arg
 370 375 380
 Val Pro Thr Ile Trp
 385

<210> 8259

<211> 715

<212> PRT

<213> B.fragilis

<400> 8259

Pro Asn Lys Ile Thr Leu Met Asn Ile Lys Arg Phe Leu Leu Leu Gly
 1 5 10 15
 Ile Met Ala Leu Tyr Ala Ile Ile Pro Ala Trp Gly Gln Ala Gln Lys
 20 25 30
 Val Glu Ile Arg Gly Ser Val Ile Asp Asp Glu Gly Glu Pro Ala Ile
 35 40 45

Ser Ile Val Ile Arg Asp Gln Asn Glu Lys Gly Asp Val Tyr Gly Ile
 50 55 60
 Thr Asp Leu Asp Gly Lys Phe Lys Ile Met Ala Asp Pro Asn Thr Thr
 65 70 75 80
 Leu His Phe Ser Gly Phe Ala Tyr Ala Ser Lys Thr Val Lys Leu Lys
 85 90 95
 Gly Lys Thr Thr Ile Asn Val Val Ile Ser Tyr Glu Ala Ser Met Ile
 100 105 110
 Asp Glu Val Val Ile Thr Ala Lys Lys Val Val Asp Lys Leu Leu Pro
 115 120 125
 Glu Pro Thr Asp Ile Glu Ile Val Gly Asn Gln Tyr Ile Ile His Pro
 130 135 140
 Lys Val Lys Ile Pro Lys Glu Met Tyr Lys Pro Asn Thr Arg Ile Val
 145 150 155 160
 Val Gln Pro Met Leu Val Asn Ile Thr Arg Lys Thr Gln Ser Leu Phe
 165 170 175
 Arg Pro Ala Val Val Thr Gly Lys Glu Tyr Ala Ile Thr Leu Glu Arg
 180 185 190
 Met Met Glu Phe Asp Leu Ser Arg Asp Pro Leu Ala Ala Phe Gln Glu
 195 200 205
 Lys Thr Gln Lys Ile Asp Lys Asn Glu Val Ile Ala Tyr Val Asp Ser
 210 215 220
 Leu Tyr Met Asp Asn Pro Asp Asp Glu Cys Arg Cys Asp Ile Tyr Met
 225 230 235 240
 Tyr Leu Val Glu Tyr Lys Lys Leu Ala Tyr Lys Asp Thr Val Val Ile
 245 250 255
 Ala Lys Gly Thr Val Asn Pro Met Arg Phe Phe Thr Tyr Gln Ala Asp
 260 265 270
 Gly Met Lys Ile Arg Asp Glu Lys Tyr Ile Pro Lys Pro Gln Lys Gln
 275 280 285
 Gln Arg Gly Asp Arg Gly Glu Val Lys Leu Asn Phe Leu Ile Asn Ser
 290 295 300
 Ala Thr Ile Asp Glu Lys Asp Pro Asn Asn Gln Arg Glu Leu Glu Lys
 305 310 315 320
 Met Arg Leu Arg Leu Gln Glu Ile Glu Thr Asp Pro Asn Ser Glu Phe
 325 330 335
 Leu Ser Phe Ser Val Lys Gly Val Ser Ser Pro Glu Gly Pro Tyr Gln
 340 345 350
 Ser Asn Leu Lys Leu Ala Gln Lys Arg Thr Asp Ser Thr Leu Lys Arg
 355 360 365
 Ile Phe Gly Phe Leu Asn Gly Gly Thr Ile Asn Ala Ile Lys Asp Ser
 370 375 380
 Thr Tyr Thr Glu Gly Val Val Ala Ser Trp Glu Glu Val Ala Glu Leu
 385 390 395 400
 Met Glu Arg Asp Ser Leu Pro Thr Asp Lys Leu Arg Glu Ile Ile Asn
 405 410 415
 Cys Tyr Pro Asp Asn Met Ala Ser Gln Tyr Ser Arg Ile Leu Arg Leu
 420 425 430
 Pro Glu Tyr Arg Asn Val Ile Leu Thr Thr Tyr Leu Pro Arg Leu Arg
 435 440 445
 Arg Val Glu Tyr Ser Phe Asn Tyr Ser Val Met Arg Leu Leu Asn Asp
 450 455 460
 Glu Glu Ile Arg Ile Met Tyr Lys Gln Asp Tyr Lys Lys Leu Val Pro
 465 470 475 480
 Tyr Glu Phe Trp Arg Ile Tyr Leu Asp Ala Asp Asn Asp Ser Thr Arg
 485 490 495
 Glu Val Ile Cys Arg Gln Ala Leu Glu Gln Tyr Pro Lys Phe Met Ile
 500 505 510
 Met Ala Asn Glu Leu Ala Ala Leu Leu Ile Glu Gln Lys Lys Ala Asp

515 520 525
 Ser Lys Leu Leu Glu Pro Phe Val Ser Arg Ser Ala Pro Thr Glu Leu
 530 535 540
 Leu Cys Asn Gln Val Ile Ala Leu Met Asp Glu Arg Ala Tyr Asn Arg
 545 550 555 560
 Ala Asp Ser Ile Ile Asp Phe Leu Pro Asp Asn Asp Met Thr Gln Asp
 565 570 575
 Val Arg Ala Ile Val Gly Ala Tyr Asn Gly His Phe Glu Asp Ala Tyr
 580 585 590
 Glu Arg Phe Gly Thr Gln Gly Gly Ile Asn Glu Val Val Leu Leu Met
 595 600 605
 Ala Met Lys Gln Asn Glu Glu Ala Trp Glu Lys Ala Gln Glu Leu Pro
 610 615 620
 Asp Glu Pro Leu Ser Tyr Tyr Leu Arg Ala Ala Cys Ala Asn Arg Leu
 625 630 635 640
 Asp Lys Val Ser Glu Ala Tyr Ala Phe Ile Lys Arg Ala Met Asn Glu
 645 650 655
 Asp Pro Ser Leu Lys Glu Ile Ala Gln Ile Asp Gly Asp Val Thr Asp
 660 665 670
 Leu Leu Gln Gln Leu Glu Asp Glu Lys Lys Glu Leu Lys Glu Lys Ala
 675 680 685
 Glu Lys Thr Lys Glu Lys Asn Glu Thr Glu Asp Thr Glu Thr Glu Glu
 690 695 700
 Ser Gly Leu Asn Glu Glu Lys Thr Ile Lys Gln
 705 710 715

<210> 8260
 <211> 487
 <212> PRT
 <213> B.fragilis

<400> 8260
 Tyr Gln Arg Ile Met Lys Lys Leu Ile Ile Phe Leu Phe Val Leu Ser
 1 5 10 15
 Gly Cys Val Pro Ala Val Val Phe Ala Gln Gln Gln Phe Ser Phe Lys
 20 25 30
 Asp Gly Lys Phe Lys Ile Ala Gln Phe Thr Asp Leu His Trp Thr Pro
 35 40 45
 Arg Ser Leu Ala Cys Thr Glu Thr Glu Ala Thr Ile Cys Ala Val Leu
 50 55 60
 Lys Ala Glu His Pro Asp Ile Ala Ile Leu Ser Gly Asp Val Val Thr
 65 70 75 80
 Glu Asp Pro Ala Ile Asp Gly Trp Lys Ser Val Ile Arg Ile Phe Asp
 85 90 95
 Glu Ala Lys Val Pro Phe Val Val Thr Met Gly Asn His Asp Ala Glu
 100 105 110
 His Met Ala Lys Asp Asp Ile Tyr Asp Leu Leu Leu Glu Ser Pro Tyr
 115 120 125
 Tyr Ala Gly Ala Lys Gly Pro Glu Gly Ile Met Gly Cys Gly Asn Cys
 130 135 140
 Val Ile Pro Val Tyr Gly Ser Arg Asn Arg Glu Lys Val Glu Ala Leu
 145 150 155 160
 Leu Tyr Cys Met Asp Ser Asn Asp Tyr Gln Pro Asp Lys Leu Tyr Gly
 165 170 175
 Pro Tyr Asp Trp Ile His Phe Asp Gln Ile Ala Trp Tyr Arg Lys Gln
 180 185 190
 Ser Ala Arg Phe Thr Lys Glu Asn Asn Gly Asn Pro Val Pro Ala Leu
 195 200 205
 Ala Phe Phe His Ile Pro Leu Leu Glu Tyr Asn Glu Ile Ala Gly Asp

210		215		220
Gly Lys Thr Phe Gly	Asn Asn Arg Glu Gly Glu Val Ala Ser Ala Asn			
225		230		240
Ile Asn Ser Gly Met	Phe Ala Ser Phe Ile Asp Met Lys Asp Val Met			
	245		250	255
Gly Val Phe Ala Gly	His Asp His Asp Asn Asp Tyr Leu Gly Ile Asn			
	260		265	270
Lys Gly Ile Val Leu Gly	Tyr Gly Arg Val Thr Gly Ala Asp Ala Tyr			
	275		280	285
Gly Glu Leu Thr Arg Gly	Ala Arg Ile Ile Glu Leu Tyr Glu Gly Lys			
	290		295	300
Phe Arg Phe Asp Thr Trp	Ile Thr Thr Pro Ser Gly Arg Glu Ala Thr			
305		310		320
Tyr Tyr Tyr Pro Ser Gly	Leu Asn Ser Glu Glu Glu Arg Thr Ala Asp			
	325		330	335
Tyr Leu Pro Ala Val Lys	Asn Val Ser Ser Pro Lys Gln Gly Val Ala			
	340		345	350
Tyr Thr Tyr Tyr Glu Gly	Lys Cys Lys Arg Val Ala Gly Ile Ala Ser			
	355		360	365
Cys Leu Lys Val Lys Glu	Gly Val Met Lys Asn Ile Ser Ile Lys Glu			
	370		375	380
Ala Ala Val Ala Asn His	Phe Ala Tyr Asp Phe His Thr Leu Ile Gln			
385		390		400
Ile Pro Glu Lys Gly Ile	Tyr Arg Phe Tyr Thr Phe Ser Asp Asp Gly			
	405		410	415
Ser Met Leu Tyr Ile Asp	Gly Lys Leu Val Val Asp Asn Asp Gly Gly			
	420		425	430
His Ser Ala Arg Arg Ala	Glu Gly Lys Ile Ala Leu Glu Lys Gly Phe			
	435		440	445
His Glu Leu His Leu Leu	Tyr Phe Glu Asp Tyr Met Gly Gln Glu Leu			
	450		455	460
Glu Val Gly Phe Ser Gly	Leu Asp Phe Pro Glu Val Pro Leu Gln Asp			
465		470		480
Glu Met Leu Phe Leu Pro	Asn			
	485			

<210> 8261

<211> 189

<212> PRT

<213> B.fragilis

<400> 8261

Ser Gly Asn Val Tyr Arg	Lys Phe Arg Ile Pro Ser Leu Ser Ala Asp
1	5 10 15
His Pro Lys Tyr Lys Glu	Asn Gly Arg Tyr Trp Gln Gly Gly Ile Trp
	20 25 30
Pro Gly Thr Asn Tyr Met	Val Met Gln Gly Leu Val Lys Lys Gly Tyr
	35 40 45
His Lys Leu Ala Arg Glu	Ile Ala Leu Asn His Tyr Ala Glu Val Leu
	50 55 60
Glu Val Tyr Lys Asn Thr	Gly Thr Phe Trp Glu Tyr Tyr Ser Pro Glu
65	70 75 80
Lys Ala Glu Pro Gly Phe	Met Ala Arg Lys Glu Phe Val Gly Trp Thr
	85 90 95
Gly Leu Pro Pro Ile Ala	Glu Leu Ile Glu Phe Ile Ile Gly Ile Arg
	100 105 110
Gly Asp Tyr Val Asn Gln	Gln Ile Ile Trp Asp Met Asn Leu Thr Glu
	115 120 125
Thr Asn Gly Ile Glu Arg	Tyr Pro Phe Gly Ser Glu Gly Ile Ile Asn

130		135		140
Leu Lys Ala Glu Ala Arg Arg Ser Ala Asn Asp Glu Pro Arg Ile Ala				
145		150		155
Val Asp Thr Asn Ile Gly Phe Glu Leu Leu Val Leu Tyr Gly Gly Lys				
	165		170	175
Glu Lys Lys Val Asn Val Thr Pro Gly Lys His Thr Tyr				
	180		185	

<210> 8262
 <211> 180
 <212> PRT
 <213> B.fragilis

<400> 8262	
Ser Thr Val Val Phe Phe Leu Leu Glu Lys Arg Leu Lys Val Pro Asp	
1	5 10 15
Phe Leu Trp Leu Leu Leu Asn Phe Asp Trp Arg Lys Ser Val Lys Met	
	20 25 30
Phe Leu Phe Tyr Ala Asp Leu Phe Asn Val Val Phe Val Leu Cys Ala	
	35 40 45
Phe Cys Cys Leu Tyr Cys Asn Met Tyr Phe Val Phe Val Ser Phe Cys	
	50 55 60
Ile Leu Leu Met Leu Ile Tyr Gly Leu Phe Ser Ser Phe Pro Val Ser	
65	70 75 80
Arg Ala Gly Lys Thr Asn Ser Ile Ala Gly Lys Ile Tyr Asn Leu Thr	
	85 90 95
Ile Val Arg Phe Leu Leu Arg Pro Phe Ile Glu Ser Ile Ser Gln Ser	
	100 105 110
Leu Leu Ile Lys Asp Ala Ala Gly Met Tyr Ser Tyr Ile Pro Lys Gln	
	115 120 125
Ala Gln Val Arg Ile Arg Phe Met Ser Phe Tyr Asn Val Tyr Thr Phe	
	130 135 140
Leu Ile Cys His Met Gly Arg Glu Met Ser Phe Ser Pro Cys Pro Gly	
145	150 155 160
Cys Ser Glu Thr Arg Leu Cys Asp Ile Thr Trp Phe Pro Cys Pro Leu	
	165 170 175
Gly Glu Ala Gly	
	180

<210> 8263
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8263	
Gln Ala Pro Val Gln Met Pro Val Val Ser Leu Gly Arg Met Met Gln	
1	5 10 15
Arg Lys Met Ala Lys Leu Ile Lys Leu Phe Phe Pro Trp His Tyr Val	
	20 25 30
Ile Asn Tyr Phe Thr Asn Lys Ala Glu Val Gly Ile Gly Ala Asn Ser	
	35 40 45
Phe Ala Glu Gly Ser Phe Gln Asn Gln Leu Lys Cys Ser Pro Ser	
	50 55 60

<210> 8264
 <211> 551
 <212> PRT
 <213> B.fragilis

<400> 8264

Thr	Asn	Leu	Leu	Ile	Lys	Thr	Val	Met	Lys	Lys	Tyr	Ile	Pro	Leu	Leu
1				5					10					15	
Ala	Leu	Ser	Ala	Leu	Thr	Phe	Cys	Ser	Cys	Ser	Asp	Phe	Leu	Asn	Val
			20					25					30		
Gln	Pro	Glu	Gly	Asn	Pro	Ala	Thr	Thr	Ser	Tyr	Phe	Leu	Asn	Asp	Glu
		35					40					45			
Gln	Ala	Ile	Asp	Ala	Ile	Asp	Gly	Leu	Tyr	Ala	Pro	Ile	His	Gln	Glu
	50					55					60				
Lys	Gly	Phe	Gly	Arg	Glu	Leu	Phe	Trp	Glu	Gln	Gly	Ala	Ala	Cys	Asp
65					70					75					80
Ile	Val	Trp	Ala	Lys	Ser	Arg	Gly	Phe	Asn	Ser	Leu	Ala	Thr	Phe	Asn
				85					90					95	
Tyr	Asn	Gly	Asp	Glu	Ser	Pro	Ile	Ser	Gly	Gly	Phe	Asp	Leu	Phe	Tyr
			100					105					110		
Gln	Asn	Met	Ala	Arg	Ser	Asn	Trp	Ile	Ile	Lys	Gln	Leu	Leu	Ala	Lys
		115					120					125			
Glu	Lys	Lys	Gly	Gly	Leu	Ser	Asp	Val	Glu	His	Arg	Ser	Leu	Gly	Glu
	130					135					140				
Ala	Phe	Phe	Met	Arg	Gly	Met	Ala	His	Phe	Trp	Ile	Ala	Tyr	Arg	Tyr
145					150					155					160
Gly	Thr	Lys	Asp	Gln	Gly	Val	Pro	Phe	Val	Arg	Tyr	Glu	Asp	Phe	Glu
				165					170					175	
Gly	Asp	Tyr	Asp	Asn	Ser	Ile	Pro	Pro	Gln	Gln	Ala	Ser	Val	Ile	Asp
			180					185					190		
Asn	Tyr	Lys	Phe	Ile	Ile	Glu	Asp	Met	Asp	Asn	Ala	Ile	Ser	Tyr	Leu
		195					200					205			
Pro	Lys	Phe	Glu	Glu	Tyr	Ser	Asp	Asp	Asp	Lys	Gly	Arg	Ala	His	Lys
	210					215					220				
Ala	Ala	Ala	Val	Ala	Tyr	Lys	Ala	Lys	Val	Tyr	Ala	Tyr	Trp	Ala	Thr
225					230					235					240
Trp	Asp	Glu	Thr	Gln	Trp	Asn	Asn	Val	Ile	Ala	Met	Val	Asn	Ser	Leu
				245					250					255	
Glu	Thr	Asp	Tyr	Gly	Arg	Gly	Leu	Ala	Asp	Thr	Phe	Ala	Glu	Val	Phe
			260					265					270		
Ser	Ser	Glu	Phe	Thr	Asp	Phe	Trp	Asn	Lys	Glu	Tyr	Ile	Trp	Ser	Ile
		275					280					285			
Pro	Ser	Asn	Gly	Gly	Ser	Thr	Gly	Gly	Gly	Val	Glu	Phe	Pro	Gly	Val
		290				295					300				
Ile	Leu	Glu	Asp	Lys	Ala	Trp	Gly	Val	Tyr	Asn	Gly	Trp	Gly	His	Ile
305					310					315					320
Lys	Pro	Ser	Tyr	Asp	Ile	Tyr	Glu	Glu	Met	Ala	Lys	Asp	Gly	Ala	Gly
				325					330					335	
Asn	Asp	Arg	Leu	Val	Arg	Ser	Ile	Leu	Glu	Tyr	Asn	Gln	Glu	Phe	Glu
			340					345					350		
Phe	Phe	Gly	Glu	Lys	Arg	Lys	Phe	Tyr	Thr	Asp	Thr	Asn	Leu	Asp	Val
		355					360					365			
Gly	Phe	Gln	Ile	Asn	Lys	Tyr	Met	Asp	Pro	Phe	Lys	His	Lys	Asp	Ala
	370					375					380				
Asp	Thr	Lys	Gly	Tyr	Val	Asn	Thr	Asn	Gly	Asn	Trp	Pro	Thr	Ala	Arg
385					390					395					400
Val	Asn	Phe	Pro	Leu	Ile	Arg	Phe	Ala	Glu	Met	Leu	Leu	Phe	Arg	Ala
				405					410					415	
Glu	Ala	Tyr	Leu	Met	Thr	Asp	Gln	Pro	Gly	Lys	Ala	Lys	Glu	Asp	Leu
			420					425					430		
Asn	Arg	Ile	Arg	Arg	Arg	Ser	Asn	Leu	Lys	Glu	Leu	Ile	Asp	Met	Pro
		435					440					445			
Thr	Met	Ala	Asp	Leu	Tyr	His	Glu	Arg	Arg	Cys	Glu	Leu	Ala	Phe	Glu
	450					455						460			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96
 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112
 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128
 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144
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 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176
 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192
 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208
 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224
 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256
 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272
 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288
 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304
 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320
 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336
 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352
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 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384
 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400
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 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432
 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448
 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464
 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480
 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496
 497 498 499 500

Tyr Thr Asp His Leu Phe Asp Leu Lys Arg Trp His Arg Ser Ser Asn
 465 470 475 480
 Val Val Ile Lys Glu Leu Ala Ala Lys Glu Leu Asn Ala His Pro Arg
 485 490 495
 Ile Arg Lys Tyr Ala Asp Arg Ser Asn Pro Glu Ser Thr Phe Thr Ile
 500 505 510
 Glu Pro Tyr Ala Asp Tyr Leu Asn Lys Thr Pro Tyr Gln Asp Tyr Met
 515 520 525
 Met Val Phe Pro Tyr Pro Ala Glu Gln Ile Thr Lys Ser Asn Gly Lys
 530 535 540
 Leu Ile Gln Asn Asp Gly Tyr
 545 550

<210> 8265
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 8265
 Met Phe Ser Leu Cys Thr Arg Leu Pro Cys Ala Ser Arg Gln Thr Thr
 1 5 10 15
 Leu Gln Pro Val Arg Lys Pro Gly Ser Ile Pro Ile Thr Arg Phe Cys
 20 25 30
 Pro Lys Gly Gly Ala Arg Ser Ser Trp Arg Arg Phe Ser Val Lys Thr
 35 40 45
 Arg Ile Ala Ser Ser Ser Ala Cys Ser Phe Thr Glu Gly Gly Lys Phe
 50 55 60
 Gly Phe Asp Gly Arg Phe Gln Gln Thr Ala Val Gly Ile Arg Ala Asp
 65 70 75 80
 Asp Ser Leu Ala Gly Lys Glu Ile Thr His Cys Ile Thr Gly Thr Phe
 85 90 95
 Val Phe Ala His Leu Gly Val His Leu His Trp Ser Asp Leu Leu Leu
 100 105 110
 Ser Gly Leu Phe Phe Ala Met Val Ala Ile Val Glu Glu Thr Met Met
 115 120 125
 Arg Gly Tyr Val Leu Gly Arg Leu Leu Arg Thr Arg Leu Asn Lys Phe
 130 135 140
 Ile Ser Leu Leu Ile Ser Ser Leu Leu Phe Ala Leu Leu His Leu Met
 145 150 155 160
 Asn Pro Asn Val Ala Phe Leu Pro Met Leu Asn Leu Val Leu Gly Gly
 165 170 175
 Leu Leu Leu Gly Ala Ser Tyr Leu Tyr Thr Arg Asn Leu Trp Phe Pro
 180 185 190
 Val Ser Leu His Phe Phe Trp Asn Trp Ile Gln Gly Pro Val Leu Gly
 195 200 205
 Tyr Glu Val Ser Gly Asn Arg Phe Cys Glu Thr Leu Phe Ser Leu Arg
 210 215 220
 Leu Pro Ala Asn Asn Leu Ile Asn Gly Gly Ala Phe Gly Phe Glu Gly
 225 230 235 240
 Ser Leu Val Cys Thr Val Leu Ala Thr Leu Phe Thr Leu Phe Ile Ile
 245 250 255
 Trp Trp Phe Glu Gln
 260

<210> 8266
 <211> 532
 <212> PRT
 <213> B.fragilis

<400> 8266

Lys Ile Thr Leu Lys Ile Glu Arg Lys Glu Cys Phe Arg Leu Arg Ser
 1 5 10 15
 Leu Ser Ser Lys Arg Phe Ser Ile Thr Cys His Lys Phe Ile Thr Lys
 20 25 30
 Gln Asn Ser Arg Ser Met Asn Ile Lys Glu Ile Leu Asn Gln Ser Glu
 35 40 45
 Gly Arg Arg Leu Glu Phe Lys Ala Glu Leu Pro Glu His Ser Asp Leu
 50 55 60
 Ala Lys Thr Val Val Ala Phe Ala Asn Asp Ala Gly Gly Asp Leu Tyr
 65 70 75 80
 Ile Gly Val Ala Asp Asp Pro Arg Glu Val Val Gly Leu Asp Glu Asp
 85 90 95
 Lys Leu Val Thr Ile Glu Glu Lys Ile Ser Asn Ile Ile Phe Asp Arg
 100 105 110
 Cys Tyr Pro Ala Ile Leu Pro Glu Ile Lys Phe Ile Ser Glu Glu Asn
 115 120 125
 Lys His Leu Ile Gln Val Thr Val Phe Arg Gly Ser Thr Pro Pro Tyr
 130 135 140
 Tyr Leu Lys Glu Lys Gly Lys Leu Gln Gly Thr Phe Ile Arg Val Gly
 145 150 155 160
 Ser Ala Asn Arg Leu Ala Asp Glu Ala Ile Ile Ser Glu Leu Glu Arg
 165 170 175
 Arg Arg Arg Asn Ile Ser Phe Asp Ser Glu Val Ile Pro Asp Lys Pro
 180 185 190
 Val Asn Asp Leu Asn Ile Asp Gly Phe Lys Ala Ile Phe Lys Glu Lys
 195 200 205
 Thr Gly Glu Glu Leu Ser Asp Gln Ala Leu Arg Lys Leu Asp Leu Val
 210 215 220
 Lys Asp Met Gln Gly Ala Glu Tyr Pro Thr Asn Ala Leu Ile Leu Phe
 225 230 235 240
 Ser Asp Asp Pro Leu Arg Asn Ser Leu Phe His Tyr Ala Lys Val Glu
 245 250 255
 Cys Ala Arg Phe Lys Gly Val Ser Ile Asp Asp Phe Ile Asp Gln Lys
 260 265 270
 Ser Ile Thr Thr Asn Ile Ala Thr Gln Ala Glu Glu Ala Tyr Asn Phe
 275 280 285
 Val Leu Arg His Ile Asn Lys Gly Ala Ser Val Glu Gly Val Tyr Thr
 290 295 300
 Val Ser Arg Trp Glu Tyr Pro Val Lys Ala Ile Arg Glu Ala Ile Arg
 305 310 315 320
 Asn Ala Val Val His Arg Asp Tyr Ser Leu Thr Gly Lys Asp Val Lys
 325 330 335
 Ile Ala Ile Tyr Asp Asp Met Val Glu Ile Thr Ser Pro Gly Leu Leu
 340 345 350
 Pro Pro Ser Ile Asp Tyr Ala Ala Met Glu Ser Arg Gln Ser Asp Ala
 355 360 365
 Arg Asn Lys Val Ile Ala Pro Val Phe Lys Arg Leu Gly Ile Ile Asp
 370 375 380
 Gln Trp Gly Asn Gly Leu Lys Leu Ile Ala Asp Glu Met Lys Glu Tyr
 385 390 395 400
 Pro Asn Ile Glu Leu Arg Trp Arg Glu Val Gly Leu Ser Phe Gln Val
 405 410 415
 Gln Phe Val Arg Leu Asp Tyr Val Leu Asn Ala Glu Arg Ile Lys Asp
 420 425 430
 Ile Gln Gln Glu Leu Gln Gln Glu Leu Gln Gln Glu Leu Gln Gln Glu
 435 440 445
 Leu Gln Gln Glu Leu Arg Lys Ala Thr Leu Tyr Ser Glu Val Leu Arg
 450 455 460

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Cys Ile Val Ser Asn Ala Leu Ser Arg Gln Asp Ile Ser Leu Ala Leu
 465 470 475 480
 Gly Gln Lys Lys Val Ser Gly Gln Leu Asn Lys Val Ile Gln Lys Leu
 485 490 495
 Ile Ala Asn Asn Leu Ile Glu Arg Thr Ile Pro Glu Lys Pro Asn His
 500 505 510
 Pro Ala Gln Lys Phe Arg Leu Thr Glu Arg Gly Gln Leu Phe Leu Gly
 515 520 525
 Leu Leu Ala Lys
 530

<210> 8267
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8267
 Val Ala Ser Ser Arg Lys Gly Asn Lys Asn Leu Lys His Trp Arg Tyr
 1 5 10 15
 Trp Ile Phe Gln Ala Leu Leu Tyr Thr Cys Thr Glu Lys Leu Lys Val
 20 25 30
 Leu Val Asn Gly Val Leu Leu Arg Cys Asp Ala Asp Tyr Leu Phe Ile
 35 40 45
 Arg Asn Thr Gly Glu Gly Tyr Ile Trp Asp Glu Thr Pro Ile Phe Ile
 50 55 60
 Arg Ile Met Pro Gln Ser Trp Gln Gln Lys
 65 70

<210> 8268
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 8268
 Glu Ser Arg Phe Val Asn Glu Leu Gly Asn Gly Thr Ser Arg Leu Thr
 1 5 10 15
 Ile Pro Val Asn Asp Leu Met Asn Tyr Val Glu Tyr Phe His Ile
 20 25 30
 Ser Lys Gln Asn Gly Leu Val Glu Tyr Cys Asn Lys Ala Ile Val Thr
 35 40 45
 Leu Gln Gln Lys Leu Asp Lys Glu Lys Asp Asn Phe Asn Lys Arg Ile
 50 55 60
 Asn Ser Leu Leu
 65

<210> 8269
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 8269
 Tyr Gly Lys Pro Ala Arg Gly Arg Ser Gly Gln Gln Arg His Gln Arg
 1 5 10 15
 His Gln Val Gly Gly Lys Gln Glu Tyr Pro Glu Gly Lys Gly Asp Asn
 20 25 30
 Gln Asp Gln Leu Pro His Thr Ala Gln Thr Val Glu Arg Val Arg Lys
 35 40 45
 Glu Arg Ala Cys Arg Gly Cys Pro Met Thr Ala Asp Ala Ala Arg Leu
 50 55 60

Leu Lys Glu Phe Asp Gln Ile Lys Asn Leu Lys Thr Met
 65 70 75

<210> 8270

<211> 536

<212> PRT

<213> B.fragilis

<400> 8270

Asn	Leu	Lys	Thr	His	Lys	Glu	Val	Thr	Ser	Asn	Lys	Ser	Lys	Thr	Leu
1				5					10					15	
Asp	Phe	Val	Ile	Ser	Lys	Thr	Met	Lys	Ile	Phe	Arg	Tyr	Ile	Leu	Leu
		20						25					30		
Ala	Ser	Leu	Thr	Cys	Thr	Leu	Phe	Ser	Cys	Gly	Pro	Asp	Glu	Leu	Ile
		35					40					45			
Pro	Glu	Ser	Val	Pro	Pro	Val	Val	Asn	Pro	Gly	Asp	Lys	Asp	Glu	Pro
	50					55					60				
Gly	Glu	Glu	Pro	Glu	Glu	Pro	Glu	Glu	Pro	Ala	Lys	Ile	Gln	Leu	Gly
65					70					75				80	
Ile	Thr	Ala	Ser	Leu	Gln	Asn	Met	Gln	Gln	Thr	Arg	Gly	Ile	Ile	Glu
			85					90						95	
Ala	Phe	Ala	Pro	Gly	His	Glu	Met	Gly	Val	Phe	Val	Gly	Thr	Ser	Gln
			100					105						110	
Thr	Asp	Glu	Ala	Ala	Gly	Ile	Lys	Asn	Ala	Ser	Tyr	Leu	Phe	Asp	Gly
		115					120						125		
Lys	Val	Trp	Asn	Ala	Gly	Gln	Asp	Val	Pro	Val	Glu	Ala	Asp	Ala	Asp
		130				135						140			
Val	Val	Ala	Tyr	Leu	Pro	Tyr	Asn	Arg	Glu	Val	Thr	Asp	Phe	Lys	Ser
145					150					155				160	
Val	Pro	Phe	Asp	Leu	Ala	Asp	Gln	Asn	Asp	Ile	Leu	Tyr	Gly	Ala	Ala
			165						170					175	
Lys	Val	Thr	Lys	Asp	Val	Pro	Thr	Ala	Ser	Leu	Met	Met	Gln	His	Ala
			180					185						190	
Met	Thr	Leu	Val	Arg	Met	Arg	Leu	Met	Lys	Asn	Glu	Tyr	Met	Gly	Thr
		195					200						205		
Gly	Leu	Val	Ser	Asp	Met	Thr	Phe	Ala	Gly	Val	Leu	Thr	Ser	Gly	Thr
		210				215						220			
Val	Asp	Ala	Leu	Thr	Gly	Ala	Val	Thr	Lys	Asp	Tyr	Asn	His	Gly	Arg
225					230					235				240	
Gly	Ser	Val	Lys	Val	Gly	Gly	Asn	Tyr	Met	Leu	Asn	Asp	Glu	Asn	Pro
			245						250					255	
Val	Ile	Val	Asp	Ala	Ile	Met	Ile	Pro	Arg	Ala	Ala	Tyr	Asp	Glu	Gln
			260					265						270	
Ala	Ser	Val	Ser	Phe	Val	Ile	Asp	Gly	Gln	Lys	His	Thr	Tyr	Ala	Phe
			275				280						285		
Pro	Val	Gln	His	Glu	Trp	Lys	Ala	Gly	Met	Lys	Tyr	Thr	Tyr	Thr	Leu
			290			295						300			
Lys	Met	Thr	Gly	Asn	Tyr	Asn	Ala	Pro	Val	Asn	Lys	Glu	Gln	Val	Asp
305				310						315				320	
Ile	Asp	Val	Glu	Tyr	Trp	Gly	Gln	Tyr	Gly	Lys	Thr	Asp	Asp	Ile	Val
			325						330					335	
Leu	Asn	Pro	Asn	Pro	Glu	Asp	Tyr	Glu	Phe	Thr	Ile	Trp	Pro	Asn	Tyr
			340					345						350	
Thr	Ala	Tyr	Gly	Tyr	Asp	Cys	Tyr	Gln	Asn	Glu	Gly	Lys	Val	Phe	Gly
		355				360						365			
Thr	Phe	Tyr	Tyr	Pro	Trp	Cys	Gly	Thr	Ser	Glu	Gly	Glu	Leu	Arg	Phe
		370				375					380				
Val	Phe	Met	Lys	Gln	Gly	Met	Asn	Glu	Ile	Val	Glu	Lys	Phe	Gln	Pro
385					390					395					400

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

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<400> 8273
Pro Ala Asn Ala Val Ser Ile Gln Val Leu Thr Trp Ala Trp Ser Trp
1           5           10           15
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Gln Pro Pro Val Tyr Ala Thr Ala Arg Gly Thr Val Ser Phe Ala Arg
 20 25 30
 Arg Lys Gly Gly Tyr Glu Arg Cys Val Ile Ile Arg His Ser Tyr Gly
 35 40 45
 Phe Glu Thr Leu Tyr Ala His Leu Ala Ala Tyr Tyr Thr Thr Glu Gly
 50 55 60
 Gln Lys Val Asp Arg Gly Ala Val Ile Ala Phe Ala Gly Ser Thr Gly
 65 70 75 80
 Lys Ser Thr Gly Tyr His Leu His Tyr Glu Ile Arg Lys Asn Gly Lys
 85 90 95
 Pro Ile Lys Pro Tyr Trp Tyr Gly Tyr Asp Asp
 100 105

<210> 8274
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 8274
 Ser Gly Arg Ala Val Arg Glu Lys Ser Pro Arg Pro Val Lys Lys Gln
 1 5 10 15
 Arg Gln Ser Leu Ile Asn Ile Gln Met Arg Ile Thr Ala Arg Pro Gly
 20 25 30
 Ala Lys Thr Leu Val Ala Glu Cys Ala Phe Tyr Leu Tyr Met Asn Asp
 35 40 45
 Trp Leu Cys Lys Asp Lys Lys Ile Phe Ala Met Thr Leu Phe Glu Ile
 50 55 60
 Leu Asn Phe Asn Arg Glu Val Leu Glu Arg Leu Ala Gly Met Gly Phe
 65 70 75 80
 Lys Pro Asp Asp Tyr Lys Tyr Ile Asp Leu Tyr Lys Glu Tyr Glu Arg
 85 90 95
 Met Arg Cys Gln Gly Asp Lys Val Thr Tyr Cys Val Ala Val Leu Ser
 100 105 110
 Asn Arg His Gly Val Ser Glu Arg Lys Ile Tyr Glu Ile Leu Gly Arg
 115 120 125
 Phe Lys Lys Glu Cys Thr Phe His Ala Val
 130 135

<210> 8275
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 8275
 Lys Gly Gly Gln Ser Gly Ala Asp Glu Met Pro Val Pro Gly Gly Glu
 1 5 10 15
 Val Phe Tyr Arg Val Ser Glu Ala Val Gly Thr Gly Gly Ile Met
 20 25 30
 Thr Thr Leu Ser Val Ile Ser Tyr Ile Glu Arg Ile Asn Arg Val Tyr
 35 40 45
 Arg Leu Ile Arg Met Glu Arg Thr Gly Ser Leu Asp Glu Leu Ala Ser
 50 55 60
 Leu Leu Arg Val Ser Arg Thr Ile Asn Asn Tyr Leu Glu Glu Leu
 65 70 75 80
 Arg Leu Met Gly Ala Glu Ile Lys Phe Ser Arg Arg Gln Asn Pro Ile
 85 90 95
 Leu Phe Gln Glu Gln Ile Arg Ile Ala Arg Asp Gly
 100 105

<210> 8276
 <211> 412
 <212> PRT
 <213> B.fragilis

<400> 8276

Thr	Thr	Thr	Lys	Asn	Lys	Lys	Tyr	Thr	Met	Glu	Thr	Ile	Gln	Glu	Ile
1				5					10					15	
Ile	Asp	Thr	Ile	Lys	Gln	Trp	Pro	Ala	Thr	Ile	Trp	Trp	Val	Met	Gly
			20					25					30		
Ala	Leu	Phe	Ile	Ile	Ser	Trp	Phe	Trp	Asp	Thr	Pro	Pro	Arg	Lys	Lys
		35					40					45			
Arg	Asn	Lys	Asp	Lys	Met	Thr	Asp	Asp	Lys	Asn	Asn	Asp	Leu	Lys	Ser
	50					55					60				
Ser	Asn	Met	Thr	Asp	Lys	Lys	Glu	Phe	Lys	Gly	Asn	Leu	Met	Lys	Glu
65					70					75					80
Gly	Ile	Phe	Val	Trp	Val	Val	Phe	Ala	Pro	Asp	Gly	Lys	Ala	Gly	Leu
			85					90						95	
Tyr	Met	Asp	Gly	Glu	Lys	His	Leu	Glu	Asn	Gly	Thr	Tyr	Ala	Tyr	Gly
			100					105					110		
Asn	Arg	Leu	Ser	Thr	Asp	Val	Ser	Ser	Phe	His	Glu	Ile	Cys	Asn	Leu
		115					120					125			
Asp	Asn	Lys	Pro	Val	Tyr	Leu	His	Phe	Pro	Glu	His	Gly	Ile	Ser	Val
	130					135					140				
Arg	Tyr	Arg	Ile	Arg	Leu	Arg	Tyr	Ser	Arg	Thr	Asp	Asp	Ala	Gly	Ile
145					150					155					160
Glu	Arg	Ser	Glu	His	Glu	Pro	Glu	Thr	Cys	Leu	Pro	Ala	Trp	Ile	Val
				165					170					175	
Arg	Gly	Lys	Thr	Gly	Gln	Thr	Gly	Leu	Tyr	Leu	Gln	Lys	Trp	His	Glu
			180					185					190		
Glu	Lys	Cys	Phe	Ile	Pro	Asp	Met	Ser	Gly	Leu	Pro	Gly	Leu	Pro	Asp
		195					200					205			
Leu	Gln	Pro	Asp	Gly	Ile	Pro	Val	Arg	Ile	Glu	Met	Leu	Ile	Arg	Lys
	210					215					220				
Ala	Tyr	Pro	Phe	Phe	Asp	Leu	Val	Lys	Pro	Ala	Ser	Trp	Arg	Ser	Trp
225					230					235					240
Gly	Ile	Ser	Ser	Asn	Pro	Ala	Ser	Leu	Lys	Gly	Asn	Phe	Phe	Val	Asn
				245					250					255	
Pro	Gly	Glu	Gly	Asn	Leu	Thr	Gly	Glu	Gly	Val	Val	Met	Trp	Thr	Val
			260					265					270		
Phe	Thr	Gly	Asp	Gly	Lys	Ala	Ala	Leu	Tyr	Met	Asp	Asp	Arg	Trp	His
			275				280					285			
Leu	Glu	Asn	Gly	Ile	Leu	Ala	Tyr	Gly	Glu	Arg	Leu	Ser	His	Asp	Val
	290					295					300				
Pro	Val	Leu	His	Lys	Ile	Phe	Asn	Leu	Glu	Glu	Met	Leu	Leu	Phe	Arg
305					310					315					320
His	Phe	Pro	Lys	Arg	Gly	Val	Pro	Gln	Arg	Ile	Arg	Met	Gln	Leu	Arg
				325					330					335	
Phe	Pro	Gly	Thr	Gly	Glu	Ala	Cys	Lys	Glu	Arg	Pro	Asp	Cys	Asn	Arg
			340					345					350		
Gly	Thr	Tyr	Phe	Leu	Pro	Ala	Trp	Val	Val	Pro	Glu	Glu	Ser	Gly	Arg
		355					360					365			
Ile	Ser	Leu	Tyr	Leu	Gln	Glu	Gln	Leu	Ser	Gly	Glu	Cys	Asp	Ile	Gln
	370					375					380				
Asp	Ile	Ser	Arg	Leu	Pro	Gly	Ala	Pro	Lys	Leu	Gln	Pro	Asn	Gly	Val
385					390					395					400
Pro	Val	Arg	Val	Glu	Ile	Leu	Leu	Gln	Gln	Glu	Gly				
				405					410						

4475 8276 412 PRT B.fragilis

<210> 8277
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 8277

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Arg Ile Leu Lys Leu Cys Asp Met Ile Gln Glu Ile Ile Asp Met Ile
1           5           10           15
Lys Glu Leu Ser Gly Ser Asp Ile Leu Cys Leu Ser Phe Tyr Cys Gly
          20           25           30
Phe Ile Leu Ile Leu Ser His Arg Ser Asn Glu Lys Ala Ser Val Tyr
          35           40           45
Gly Glu Glu Lys Val Pro Asp Asn Ser Pro Glu Pro Glu Lys
          50           55           60

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<210> 8278
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 8278

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Ser Arg Gln Asn Ile Lys Glu Asp Ser Pro Met Lys Leu Leu Leu Ala
1           5           10           15
Leu Leu Leu Ser Cys Leu Pro Phe Asn Gly Ser Asn Asp Gly Lys Glu
          20           25           30
Leu Leu Asp Lys Ala Leu Glu Arg Cys Glu Arg Leu Glu Thr Leu Glu
          35           40           45
Ser Tyr Arg Asp Ile Leu Ser Arg Tyr Gly Val Ser Asp Arg Ile Pro
          50           55           60
Leu Thr Cys Pro Leu Lys Asp Arg Phe Arg Lys Ser Ser Gly Phe Gly
          65           70           75           80
Ile Arg Ile His Pro Ile Thr Gly Lys Arg Ser Phe His Ser Gly Ile
          85           90           95
Asp Met Gly Val Glu Leu Ala Ala Pro Gly Leu Arg His Arg Ser Gly
          100          105          110
Asn Gly Phe Phe Arg Glu Lys Glu Arg Gly Val Arg Lys Met Cys His
          115          120          125
Tyr Thr Pro Phe Leu Trp Leu
          130          135

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<210> 8279
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8279

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Lys Arg Cys Asp Met Glu Thr Ile Trp Glu Lys Val Asp Tyr Leu Gly
1           5           10           15
Arg Ile Leu Cys Cys Ile Ile Met Gly Ile Ala Tyr Ile Leu Ile Met
          20           25           30
Ile Ala Pro Leu Tyr Ala Ser Arg His Glu Gln Ser Gly Gln Arg Ser
          35           40           45
Asp Glu Lys Ala Phe Val Asp Glu Glu Glu Lys Val Pro Asp Asn Gly
          50           55           60
Pro Glu Pro Glu Lys
          65

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<210> 8280
 <211> 297

<212> PRT

<213> B.fragilis

<400> 8280

Glu	Phe	Cys	Cys	Pro	Glu	Ile	Gln	Thr	His	Ile	Leu	His	Asp	Lys	Met
1				5					10					15	
Ile	Met	Lys	Lys	Glu	Lys	Thr	Tyr	Ser	Arg	Ala	Pro	Leu	Pro	Phe	Val
			20					25					30		
Gly	Gln	Lys	Arg	Met	Phe	Val	Ser	Glu	Phe	Lys	Lys	Ile	Leu	Lys	His
		35					40					45			
Phe	Asp	Asp	Lys	Thr	Ile	Phe	Val	Asp	Leu	Phe	Gly	Gly	Ser	Gly	Leu
	50					55					60				
Leu	Ser	His	Ile	Thr	Lys	Arg	Glu	Arg	Pro	Asp	Ala	Val	Val	Ile	Tyr
65					70					75				80	
Asn	Asp	His	Asp	Asn	Tyr	Arg	Gly	Arg	Leu	Glu	Asn	Ile	Gly	Arg	Thr
				85					90					95	
Asn	Thr	Leu	Leu	Gly	Asp	Leu	Arg	Lys	Ile	Val	Gly	Ile	Tyr	Pro	His
			100					105					110		
Asn	Gln	Lys	Ile	Thr	Gly	Lys	Met	Arg	Glu	Ala	Phe	Leu	Glu	Arg	Ile
		115					120					125			
Arg	Leu	Glu	Glu	Thr	Thr	Gly	Phe	Val	Asp	Tyr	Leu	Thr	Leu	Ser	Thr
	130					135					140				
Ser	Leu	Leu	Phe	Ser	Gly	Lys	Tyr	Ala	Gln	Asn	Met	Glu	Glu	Leu	Glu
145					150					155				160	
His	Leu	Cys	Phe	Tyr	Asn	Lys	Ile	Arg	Gln	Ala	Asp	Tyr	Arg	Cys	Asp
				165					170					175	
Gly	Tyr	Leu	Asp	Gly	Leu	Glu	Val	Val	Cys	Tyr	Asp	Tyr	Lys	Glu	Leu
			180					185					190		
Ala	Glu	Thr	Tyr	Arg	Val	Leu	Pro	Gly	Val	Val	Phe	Leu	Val	Asp	Pro
		195					200					205			
Pro	Tyr	Met	Gly	Thr	Asp	Ile	Ser	Thr	Tyr	Arg	Met	Asp	Trp	Lys	Leu
	210					215					220				
Gly	Asp	Tyr	Leu	Asp	Val	Leu	Pro	Val	Leu	Lys	Gly	His	Pro	Phe	Val
225					230					235				240	
Tyr	Phe	Thr	Ser	Ser	Lys	Ser	Pro	Ile	Leu	Asp	Phe	Cys	Lys	Trp	Met
				245					250					255	
Glu	Glu	His	Pro	Gly	Thr	Gly	Asn	Pro	Phe	Lys	Gly	Thr	Gly	Arg	Ser
			260					265					270		
Ala	Ile	Thr	Ala	Arg	Met	Asn	Tyr	Asn	Ser	Ser	Tyr	Thr	Asp	Ile	Met
		275					280						285		
Leu	Tyr	Asn	Asn	Met	Ala	Cys	Thr	Ala							
	290					295									

<210> 8281

<211> 271

<212> PRT

<213> B.fragilis

<400> 8281

Ser	Arg	Arg	Cys	Lys	Arg	Met	Lys	Thr	Ile	Thr	Thr	Ala	Cys	Val	Asn
1				5					10					15	
His	Lys	Gly	Gly	Val	Ala	Lys	Thr	Thr	Ser	Leu	Leu	Asn	Leu	Ala	Ala
			20					25					30		
Gly	Ile	Ala	Arg	Met	His	Lys	Lys	Arg	Val	Cys	Ile	Ile	Asp	Ala	Asp
		35					40					45			
Pro	Gln	Ala	Asn	Thr	Thr	Met	Ala	Ala	Phe	Gly	Glu	Glu	Met	Ala	Ser
	50					55					60				
Leu	Pro	Arg	Glu	Val	Leu	Leu	Glu	Ser	Ala	Leu	Gln	Asp	Cys	Met	Gln
65					70					75				80	

Asp	Thr	Pro	Pro	Lys	Leu	Lys	Pro	Gln	Lys	Trp	Leu	Glu	Lys	Val	Asp
				85					90					95	
Ile	Leu	Pro	Ala	Ser	Leu	Asp	Leu	Ala	Ala	Thr	Glu	Val	Ile	Met	Tyr
			100					105					110		
Thr	Thr	Pro	Gly	Arg	Glu	Phe	Leu	Phe	Arg	Glu	Ile	Val	Lys	Gly	Leu
			115				120					125			
Glu	Glu	Lys	Tyr	Asp	His	Ile	Leu	Ile	Asp	Cys	Pro	Pro	Ser	Leu	Gly
	130					135					140				
Ile	Ile	Thr	Gln	Asn	Ala	Leu	Met	Ala	Ser	Asp	Tyr	Val	Ile	Ile	Pro
145				150						155					160
Thr	Asp	Gly	Asn	Tyr	Phe	Ala	Met	Lys	Gly	Ile	Glu	Lys	Ile	His	Tyr
			165						170					175	
Ile	Ile	Gly	Leu	Leu	Lys	Arg	Lys	Leu	Gly	Ala	Glu	Val	Arg	Ile	Leu
			180					185					190		
Gly	Tyr	Phe	Met	Thr	Lys	Tyr	Asn	Ala	Arg	Arg	Lys	Leu	Asp	Val	Asp
	195						200					205			
Ile	Arg	Glu	Ser	Leu	Val	Arg	Ser	Leu	Gly	Asp	Gly	Val	Phe	Glu	Thr
	210					215					220				
Val	Ile	Arg	Ser	Asn	Val	Ala	Leu	Gly	Glu	Ala	Gln	Tyr	Lys	Ala	Gln
225				230						235					240
Ser	Ile	Phe	Asp	Tyr	Ala	Pro	Ser	Ser	Asn	Gly	Ala	Asp	Asp	Tyr	Arg
			245						250					255	
Glu	Leu	Val	Lys	Glu	Phe	Leu	Gly	Arg	Ile	Lys	Lys	Ile	Asn	Lys	
			260					265					270		

<210> 8282

<211> 332

<212> PRT

<213> B.fragilis

<400> 8282

Pro	Ala	Ile	Arg	Ala	Leu	Met	Thr	Arg	Glu	Gly	Lys	Ser	Arg	Thr	Ala
1				5					10					15	
Ile	Leu	Ala	Gly	Leu	Ala	Ile	Val	Val	Val	Leu	Leu	Val	Trp	Val	Ile
			20					25					30		
Ile	Ala	Ser	Leu	Pro	Asp	Ser	Gly	Ser	Lys	Glu	Pro	Glu	Thr	Gly	Glu
		35				40						45			
Val	Ile	Leu	Arg	Thr	Arg	Ile	Lys	Glu	Ser	Phe	Thr	Leu	Asp	Asp	Met
	50				55					60					
Leu	Gln	Lys	Val	Gly	Lys	Glu	Asn	Thr	Ser	Lys	Ser	Ala	Ser	Leu	Ser
65				70						75					80
Gly	Phe	Asp	Pro	Val	Thr	Glu	Glu	Pro	Ala	Asp	Thr	Ala	Gly	Asn	Glu
			85						90					95	
Arg	Glu	Ile	Arg	Arg	Ile	Gln	Glu	Leu	Ile	Arg	Asp	Asn	Glu	Arg	Glu
			100				105						110		
Leu	Gly	Ala	Gly	Ile	Thr	Val	Pro	Val	Gln	Gln	Pro	Val	Ala	Ser	Gly
		115				120						125			
Gly	Lys	Glu	Lys	Pro	Ala	Leu	Gln	Glu	Lys	Lys	Glu	Glu	Glu	Val	Arg
	130					135					140				
Pro	Gly	Gln	Arg	Lys	Ala	Val	Asp	Ser	Val	Pro	Arg	Ala	Pro	Ala	Arg
145				150						155					160
Arg	Gly	Phe	Asn	Thr	Val	Arg	Leu	Val	Arg	Gln	Glu	Glu	Arg	Asn	Ala
			165						170					175	
Ile	Lys	Ala	Phe	Val	His	Ser	Thr	Gln	Thr	Val	Met	Val	Gly	Ser	Thr
		180					185						190		
Leu	Lys	Met	Gln	Leu	Ala	Glu	Asn	Cys	Leu	Thr	Asp	Asp	Gly	Gln	Arg
		195				200						205			
Ile	Arg	Lys	Gly	Thr	Pro	Val	Phe	Gly	Glu	Val	Thr	Gly	Ile	Asn	Gly
	210					215					220				

Glu Arg Val Leu Val Lys Ile Thr Ser Val Asn Leu Gly Gly Asn Ile
 225 230 235 240
 Leu Pro Phe Asp Lys Gln Val Tyr Ser Glu Asp Ala Ile Gln Gly Ile
 245 250 255
 Tyr Val Pro Gly Asn Val Lys Ala Glu Thr Ala Gln Glu Ala Gly Ala
 260 265 270
 Ala Gly Ile Ser Gly Ala Asn Thr Asn Ile Ser Gly Gly Phe Asp Met
 275 280 285
 Gly Ser Gln Leu Val Ala Gly Ala Ala Asn Ser Val Ile Asn Ala Thr
 290 295 300
 Lys Ser Ala Ala Ser Lys Asn Ile Arg Lys Val Lys Val Thr Ile Lys
 305 310 315 320
 Thr Asn Tyr Arg Ile Leu Leu Arg Gln Ser Lys Glu
 325 330

<210> 8283

<211> 97

<212> PRT

<213> B.fragilis

<400> 8283

Lys Lys Gly Arg Ile Met Lys Asp Phe Thr Ser Lys Gly Ile Ser Leu
 1 5 10 15
 Glu Asn Met Val Gly Glu Thr Pro Gly Lys Glu Lys Gly Met Thr Gly
 20 25 30
 Lys Thr Ser Pro Lys Thr Asn Gln Thr Val Ala Leu Thr Glu Asp Leu
 35 40 45
 Lys Trp Glu Leu Arg Thr Phe Ala Ser Asp His Arg Cys Arg Gly Val
 50 55 60
 Lys Thr Leu Leu Glu Thr Met Ile Glu Cys Phe Val Arg Glu Asp Gly
 65 70 75 80
 Thr Leu Asp Arg Asp Lys Leu Glu Gly Phe Trp Arg Glu Tyr Val Glu
 85 90 95
 Lys

<210> 8284

<211> 207

<212> PRT

<213> B.fragilis

<400> 8284

Asn Met Lys Arg Ile Leu Thr Leu Ile Leu Ser Phe Cys Cys Leu Leu
 1 5 10 15
 Ser Phe Val Ser Cys Glu Lys Lys Glu Ile Ala Asp Thr Phe Glu Ala
 20 25 30
 Asn Ile Arg Lys Leu His Gly Asp Tyr Arg Leu Thr Asp Ile His Trp
 35 40 45
 Pro Gly Leu Ala Val Asp Leu Asn His Asp Gly Ile Gly His Trp Ala
 50 55 60
 Leu Leu Tyr Glu Phe Gln Asn Lys Ile Gly Tyr Tyr Glu Pro Asp Tyr
 65 70 75 80
 Thr Ala Ser Val Ser Asp Gly Met Val Phe Ser His Asp Glu Thr Trp
 85 90 95
 Ala Arg Pro Ala Thr Ala Phe Asn Leu Thr Ile Pro Cys Pro Arg Tyr
 100 105 110
 Ile Val Ser Glu Gly Lys Trp Val Cys Ser Gly Ile His Gly Ile Gln
 115 120 125
 Val Thr Leu Arg Ala Asp Val Asp Ser Phe Ser Leu Gln Ser Asn Cys

130		135		140
Ser Arg Ile Phe Pro Ala Tyr Asn Asp Arg Asp Asp Val Phe Leu Ala				
145		150		155
Asn Ile Lys Asp Ile Ser Leu Val Val Leu Ser Tyr Asp Ala Ala Ser				
	165		170	175
Phe Arg Ile Gly Val His Cys Thr Leu Pro Tyr Asp Arg Pro Asp Gly				
	180		185	190
Thr Gln Glu Leu Asn Glu Asn Tyr Leu Tyr Tyr Glu Tyr Ser Arg				
	195	200		205

<210> 8285
 <211> 260
 <212> PRT
 <213> B.fragilis

<400> 8285

Glu Lys Lys Ser Ser Cys Ser Leu Ile Phe Pro Ala Gly Ile Thr Tyr				
1	5	10	15	
Val Asp Tyr Gly Ser Thr Asn Val Glu Val Asp Lys Pro Glu Gly Val				
	20	25	30	
Asp Asn Ile Leu Ala Val Lys Ala Val Gln Pro Tyr Lys Glu Asp Thr				
	35	40	45	
Asn Ile Ser Val Val Leu Glu Gly Gly Lys Phe Tyr Thr Phe Asp Leu				
	50	55	60	
Arg Tyr Val Pro Ala Pro Glu Arg Phe Ser Phe Val Ile Asp Lys Glu				
65	70	75	80	
Asp Thr Gln Arg Val Ala Ile Leu Asp Glu Lys Glu Arg Ser Tyr Gly				
	85	90	95	
Gln Lys Glu Arg Ile Arg Glu Ala Ile Ala Lys Arg Thr Pro Leu Asp				
	100	105	110	
Leu Gly Leu Lys Asp Lys Asn Ser Gly Val Glu Phe Glu Val Gly Asn				
	115	120	125	
Ile Phe Ile Asp Gly Asp Ile Leu Leu Leu Arg Met Thr Leu Ile Asn				
	130	135	140	
Arg Thr Gln Ile Gly Tyr Thr Thr Asp Phe Met Arg Phe Tyr Ile Gln				
145	150	155	160	
Asp Ala Lys Ile Arg Lys Lys Thr Ala Val Gln Gln Leu Glu Gln Asn				
	165	170	175	
Ile Leu Phe Thr Phe Asp Tyr Pro Glu Val Pro Ala His Glu Ser				
	180	185	190	
Arg Thr Phe Thr Val Ala Met Asn Lys Phe Thr Ile Pro Asp Lys Lys				
	195	200	205	
Arg Leu Ile Ile Glu Ile Gln Glu Lys Asn Gly Gly Arg His Phe Leu				
	210	215	220	
Tyr Lys Leu Lys Asn Lys Ser Leu Leu Thr Ala Glu Glu Val Phe Arg				
225	230	235	240	
Ser Arg Lys Gln Gln Glu Thr Glu Asp Glu Ala Asp Lys Ile Leu Arg				
	245	250	255	
Arg Ile Ala Arg				
	260			

<210> 8286
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 8286

Val Asp Met Arg Leu Lys Pro Ile Tyr Ile Thr Thr Leu Leu Leu Leu				
1	5	10	15	

Phe Phe Leu Ser Gly Arg Ala Gln Lys Ile Glu Glu Leu Thr Ala Val
 20 25 30
 Pro Leu Gln Ile Gly Tyr Glu Lys Thr Leu His Leu Ile Phe Pro Thr
 35 40 45
 Glu Val Lys Tyr Tyr Ser Ile Gly Gly Asp Tyr Val Ile Gly Glu Lys
 50 55 60
 Val Val Asn Cys Pro Gly Ile Ile Arg Leu Lys Ala Ala Glu Glu Asn
 65 70 75 80
 Phe Pro Gly Glu Thr Thr Leu Ser Val Val Thr Ala Asp Thr Lys Phe
 85 90 95
 Tyr Ser Tyr Ser Ile Ser Tyr Asn Ala His Pro Ala Gln Ser Tyr Val
 100 105 110
 Arg Ile Gly Gly Glu Ala Pro Ala Pro Glu Tyr Ala Ala Gly Arg Lys
 115 120 125
 Arg Lys Ala Ala Val His
 130

<210> 8287

<211> 117

<212> PRT

<213> B.fragilis

<400> 8287

Asn His Thr Gly Met Ala Met Thr Ile Glu Gln Glu Ile Glu Gln Leu
 1 5 10 15
 Val Leu Lys Cys Ile Ala Leu Asp Gly Leu Lys Ala Cys Pro Lys Asp
 20 25 30
 Leu Ala Phe Leu Glu Lys Tyr Gly Leu Lys Asn Leu Tyr Phe Phe Ser
 35 40 45
 Leu Glu Tyr Ala Met Glu Gly Thr Asp Ala Thr Val Leu Asp Ser Lys
 50 55 60
 Ala Lys Gly Leu Ile Arg Trp Tyr Leu Tyr Ser Thr Asp Phe Pro Leu
 65 70 75 80
 Leu Arg Gln Lys Tyr Glu Arg Glu Gly Lys Ala Glu Leu Met Lys Cys
 85 90 95
 Leu Tyr Leu Glu Glu Arg Tyr Phe Thr Glu Phe Leu Lys Leu Ser Gly
 100 105 110
 Gln Glu Glu Gly Leu
 115

<210> 8288

<211> 64

<212> PRT

<213> B.fragilis

<400> 8288

Ser Phe Trp Gly Lys Arg Gly Ile Glu Lys Glu Ser Val Pro Arg Val
 1 5 10 15
 Gln Val Gly Gly Ile Val Trp Val Glu Ser His Ile Val Asn Gly Lys
 20 25 30
 Phe Ile Ala Ser Lys Leu Gly Val Lys Leu Thr Pro Pro Asn Asn Pro
 35 40 45
 Gly Ile Pro His Lys Arg Arg Gly Ser Ile Ala Cys Ile Gln Met Pro
 50 55 60

<210> 8289

<211> 65

<212> PRT

<213> B.fragilis

<400> 8289

Gln Ala Gly Gly Phe Phe Leu Glu Leu Leu Phe Pro Ile Lys Ile Pro
 1 5 10 15
 Trp Lys Phe Leu Leu Ser Tyr Gly Ser Ile Ser Leu Lys Thr Ala Arg
 20 25 30
 Tyr Asn Thr Trp Leu Gln Phe Tyr Cys Ala Val Ala Phe Pro Met Lys
 35 40 45
 Glu Ile Arg Tyr Leu Thr Lys Tyr Ser Thr Leu Lys Ser Ile Leu Leu
 50 55 60
 Ile
 65

<210> 8290

<211> 393

<212> PRT

<213> B.fragilis

<400> 8290

Gln Lys Ser Met Ile His Pro Leu Leu Thr Thr Ile Lys Lys Arg Phe
 1 5 10 15
 Ile Met Lys Lys Val Arg Phe Leu Leu Ala Ala Met Val Ala Met
 20 25 30
 Phe Thr Gly Cys Gln Lys Glu Val Val Glu Gln Glu Leu Asp Asn Asn
 35 40 45
 Lys Pro Thr Pro Thr Gly Asp Thr Arg Ile Ile Ile Glu Gly Glu Gly
 50 55 60
 Met Ile Gly Pro Ala Thr Arg Ser Ser Asp Gly Lys Val Glu Phe Glu
 65 70 75 80
 Gly Gly Tyr Ala Thr Gly Ala Gly Leu Tyr Asp Gly Lys Lys Ala Val
 85 90 95
 Pro Val Glu Ala His Pro Asp Ala Gly Tyr Glu Val Asn Tyr Phe Tyr
 100 105 110
 Gly Gly Pro Glu Asn Gln Pro Lys Lys Tyr Asp Tyr Ala Gln Ser Gly
 115 120 125
 Thr Ser Ala Phe Asn Val Tyr Leu Glu Gly Gln Asp His Thr Phe His
 130 135 140
 Cys Gly Phe Lys Glu Lys Lys Arg Asp Leu Thr Val Asn Ala Gly Thr
 145 150 155 160
 Gly Gly Ser Val Ser Pro Ser Gly Thr Asn Ser Tyr Arg Val Glu Lys
 165 170 175
 Pro Ile Ser Ile Thr Ala Thr Pro Asp Ser Gly Tyr Glu Phe Ala Gly
 180 185 190
 Trp Thr Val Thr Gln Gly Asp Val Thr Ile Glu Asn Pro Gly Ser Pro
 195 200 205
 Ala Thr Thr Ala Thr Leu His Asn Asp Asn Ser Thr Ile Thr Ala Asn
 210 215 220
 Phe Lys Ser Gly Ala Glu Leu Val Phe Thr Val Arg Ala Ser Ala Asn
 225 230 235 240
 Lys Ile Val Pro Met Pro Thr Leu Gly Ser Gly Pro Tyr Thr Val Asp
 245 250 255
 Tyr Gly Asp Gly Lys Val Ala His Glu Val Asn Leu Arg Ala Pro Gly
 260 265 270
 Tyr Thr Gln Tyr Pro Gly Ser Tyr His Thr Tyr Ser Ala Asp Gly Glu
 275 280 285
 Tyr Thr Val Thr Ile Lys Gly Pro Ala Ala Thr Ala Phe Ser Phe Arg
 290 295 300
 Gly Thr Arg Asn Ser Asp Leu Gln Tyr Ile Asn Pro Cys Pro Ala Lys
 305 310 315 320

Ser Ile Leu Lys Asn Thr Ile Asp Ile Ser Cys Val Thr Ser Leu Glu
 325 330 335
 Asp Ala Phe Ser Gly Met Lys Ser Leu Glu Ser Ile Glu Cys Asp Leu
 340 345 350
 Leu Glu Ser Cys Lys Gly Arg Val Thr Thr Cys Ala Asn Ile Phe Asp
 355 360 365
 Gln Cys Thr Asn Leu His Thr Ile Tyr Asn Gly Leu Phe Glu Gly Phe
 370 375 380
 Asp Lys Cys Thr Asp Phe Ser Leu Ala
 385 390

<210> 8291
 <211> 141
 <212> PRT
 <213> B.fragilis

<400> 8291
 Glu Leu Val Leu Leu Val Ile Gly Thr Glu Glu Glu Thr Gly Arg Ile
 1 5 10 15
 Phe Arg Lys Ala Arg Ser Gly Met Asp Gly Gly Thr Leu Thr Gln Asn
 20 25 30
 Pro Tyr Phe Pro Asp Val Ile Ala Ile Asp Asn Ala Gln Asp Gly Gly
 35 40 45
 Glu Pro Asp Met Val Leu Leu Thr Val Gly Ala Tyr Val Asp Asp Leu
 50 55 60
 Phe Lys Leu Arg Leu Val Asp Asn Ala Glu Leu Gln Arg Ile Ala Ile
 65 70 75 80
 Gly Thr Val Arg Leu Val Phe Gly Lys Asn Gly Ile Cys Val Arg Leu
 85 90 95
 Val Asp Gln Glu Gln Gly Thr Gly Thr Val Phe Leu Lys Gly Lys Ala
 100 105 110
 Cys Leu Ala Cys Ser Arg Asn Met Pro Phe Leu Leu Glu Cys Asp Phe
 115 120 125
 Gln Glu Val Ser Val Gln Glu Ala Leu Ala Asp Cys Pro
 130 135 140

<210> 8292
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 8292
 Arg Glu Val Phe His Ile Ser Gly Lys Asp Val Ile Gln Glu Gln Phe
 1 5 10 15
 Ser Lys Gln Glu Asp Thr Phe Ser Ile Ala Leu Gln Phe Ser Lys Thr
 20 25 30
 Leu Pro Gly Thr Val Val Thr Trp Asp Cys Arg Lys Val Pro Leu Lys
 35 40 45
 Lys Val Ala Phe Thr His Phe Ala Asn Lys Arg Ser Gly Thr Val Leu
 50 55 60
 Met Phe Ser Ser Ser Lys Val Glu Ala Asn Ser Cys Ala Phe Thr Gln
 65 70 75 80
 Ser Ser Asn Asn Pro Ala Gly Ile Asp Lys Ile Leu Gly Ile Ala Glu
 85 90 95
 Lys Val Glu Leu Asn Phe Thr Ala Glu Val His Pro Leu Asn Val Phe
 100 105 110
 Ala Gly Ile Glu Leu Arg Ala Ala
 115 120

<210> 8293
 <211> 230
 <212> PRT
 <213> B.fragilis

<400> 8293

Gln	Lys	Arg	Ser	His	Phe	His	Ser	Val	Ile	Ile	Ile	Phe	Thr	Tyr	Ile	
1				5					10					15		
Cys	Asn	Gln	Thr	Lys	Ile	Ser	Tyr	Thr	Gln	Thr	Arg	Ile	Pro	Asn	Leu	
			20					25					30			
Leu	Ile	Met	Lys	Lys	Leu	Leu	Leu	Thr	Thr	Leu	Leu	Ile	Phe	Gly	Thr	
		35						40				45				
Ala	Ile	Val	His	Gly	Gln	Asp	Lys	Met	Gln	Phe	Ser	Ile	Ile	Gly	Gly	
	50					55				60						
Tyr	Glu	His	Phe	Lys	Lys	Glu	Asn	Pro	His	Asn	Gln	Thr	Ala	Gly	Tyr	
65					70					75					80	
Gly	Leu	Gly	Cys	Glu	Phe	Lys	Tyr	Tyr	Phe	Tyr	Asn	Arg	Leu	Tyr	Ala	
			85						90					95		
Leu	Ala	Asn	Phe	His	Ala	Gly	Ile	Tyr	Asn	Glu	Phe	Thr	Pro	Arg	Thr	
		100						105					110			
Ala	Met	Ala	Glu	Ile	Gly	Glu	Val	Asp	Phe	Ser	Met	His	Trp	Arg	Thr	
	115						120					125				
Arg	Glu	Tyr	Lys	Gly	Gly	Ala	Gly	Met	Gly	Ile	Asp	Leu	Leu	Lys	Thr	
	130					135					140					
Gln	Arg	His	Asn	Ile	Tyr	Thr	Gln	Ala	Thr	Phe	Gly	Leu	Ala	Lys	Leu	
145					150					155					160	
Lys	Gln	Ser	Val	Pro	Val	Ile	His	Ser	Tyr	Arg	Pro	Thr	Val	Glu	Met	
				165					170					175		
Gly	Thr	Lys	Asn	Thr	Tyr	Leu	Leu	Arg	Tyr	Ala	Thr	Ser	Ile	Ser	Ile	
			180					185					190			
Gly	Tyr	Asp	Tyr	Arg	Val	Ser	Lys	Ser	Phe	Ser	Ile	Gly	Leu	Asn	Tyr	
	195					200					205					
Thr	Gly	Trp	Trp	Val	Ala	Asp	Val	Ala	Tyr	Arg	Asn	Thr	Leu	Asn	Ala	
	210					215					220					
Lys	Ile	Gly	Tyr	Asn	Phe											
225					230											

<210> 8294
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 8294

Phe	Leu	Tyr	Pro	Val	Ser	Pro	Asp	Thr	Pro	Leu	Phe	Ile	Tyr	Lys	Ile	
1				5					10					15		
Thr	Leu	Met	Lys	Ile	Lys	Val	Gly	Phe	Gly	Phe	Asp	Val	His	Gln	Leu	
		20						25					30			
Val	Glu	Gly	Arg	Glu	Leu	Trp	Leu	Gly	Gly	Ile	Leu	Leu	Glu	His	Glu	
		35					40					45				
Lys	Gly	Leu	Leu	Gly	His	Ser	Asp	Ala	Asp	Val	Leu	Val	His	Ala	Ile	
	50					55					60					
Cys	Asp	Ala	Leu	Leu	Gly	Ala	Ala	Asn	Met	Arg	Asp	Ile	Gly	Tyr	His	
65					70					75					80	
Phe	Pro	Asp	Asn	Ala	Gly	Glu	Tyr	Lys	Asn	Ile	Asp	Ser	Lys	Ile	Leu	
			85						90					95		
Leu	Lys	Lys	Thr	Val	Glu	Leu	Ile	Ala	Ala	Lys	Gly	Tyr	Gln	Ile	Gly	
			100					105					110			
Asn	Ile	Asp	Ala	Thr	Ile	Cys	Ala	Glu	Arg	Pro	Lys	Leu	Lys	Ala	His	
	115						120						125			

Ile Pro Ser Met Gln Gln Val Leu Ala Glu Val Met Gly Ile Asp Ala
 130 135 140
 Asp Asp Ile Ser Ile Lys Ala Thr Thr Thr Glu Lys Leu Gly Phe Thr
 145 150 155 160
 Gly Arg Glu Glu Gly Ile Ser Ala Tyr Ala Thr Val Leu Ile Asn Arg
 165 170 175
 Val

<210> 8295
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 8295
 Gly Lys Met Pro Met Leu Ile Leu Leu Ser Cys Ala Lys Thr Met Ser
 1 5 10 15
 Asp Val Ser Lys Thr Lys Thr Pro Leu Thr Thr Phe Pro Gly Phe Arg
 20 25 30
 Lys Glu Ala Ala Glu Val Ala Leu Gln Met Ser Gln Phe Ser Val Glu
 35 40 45
 Glu Leu Glu Arg Leu Leu Lys Val Asn Pro Lys Ile Ala Val Glu Asn
 50 55 60
 Tyr Arg Arg Tyr Gln Ala Phe His Ser Glu Gly Thr Arg Glu Leu Pro
 65 70 75 80
 Ala Leu Leu Ala Tyr Thr Gly Ile Val Phe Lys Arg Val His Pro Gln
 85 90 95
 Asp Phe Ser Glu Glu Asp Phe Cys Tyr Ala Gln Asp His Leu Arg Leu
 100 105 110
 Thr Ser Phe Cys Tyr Gly Leu Leu Arg Pro Leu Asp Met Ile Arg Pro
 115 120 125
 Tyr Arg Leu Glu Gly Asp Val Arg Leu Pro Glu Pro Gly Asn Arg Thr
 130 135 140
 Met Phe Asp Tyr Trp Lys Pro Ile Leu Thr Asp Arg Phe Ile Ala Asp
 145 150 155 160
 Ile Lys Lys Ala Gly Gly Val Leu Cys Asn Leu Ala Ser Asp Glu Met
 165 170 175
 Arg Gly Leu Phe Asp Trp Lys Arg Val Glu Lys Glu Val Arg Val Ile
 180 185 190
 Thr Pro Glu Phe His Val Trp Lys Asn Gly Lys Leu Ala Thr Val Val
 195 200 205
 Val Tyr Thr Lys Met Ser Arg Gly Glu Leu Thr Arg Tyr Ile Leu Lys
 210 215 220
 Asn Arg Ile Glu Ser Val Glu Gln Leu Lys Thr Phe Ala Trp Glu Gly
 225 230 235 240
 Phe Glu Phe Asn Glu Gln Leu Ser Asp Glu Thr Lys Tyr Val Phe Thr
 245 250 255
 Asn Gly Lys Thr Glu
 260

<210> 8296
 <211> 477
 <212> PRT
 <213> B.fragilis

<400> 8296
 Gly Gln Lys Phe Asn Phe Tyr Ser Asn Lys Lys Met Ser Thr Glu Asn
 1 5 10 15
 Glu Glu Trp Arg Glu Asp Ser Lys Ser Glu Asn Thr Asp Ala Gly Arg

	20		25		30
Asp Gly Asn Arg Ser Phe Asn Arg Glu Gly Gly Tyr Ser Arg Pro Ser					
	35		40		45
Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr Arg Pro Arg Phe Asn Ser					
	50		55		60
Asn Ser Glu Asp Arg Pro Gln Arg Ser Tyr Gly Asp Arg Pro Gln Arg					
65		70		75	80
Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr Arg Pro Arg Phe					
	85		90		95
Asn Ser Glu Gly Gly Asp Arg Pro Gln Arg Ser Tyr Gly Asp Arg Pro					
	100		105		110
Gln Arg Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr Arg Pro					
	115		120		125
Arg Phe Asn Ser Glu Gly Gly Asp Arg Pro Gln Arg Ser Tyr Gly Asp					
	130		135		140
Arg Pro Gln Arg Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg Pro Tyr					
145		150		155	160
Arg Pro Arg Phe Asn Ser Glu Gly Gly Asp Arg Pro Gln Arg Ser Tyr					
	165		170		175
Gly Asp Arg Pro Gln Arg Pro Ser Tyr Asn Arg Glu Gly Gly Asp Arg					
	180		185		190
Pro Tyr Arg Pro Arg Tyr Asn Asn Asp Asn Arg Ser Gln Gly Phe Ser					
	195		200		205
Arg Pro Ile Arg Arg Thr Gly Asp Tyr Asp Pro Asn Ala Lys Tyr Ser					
	210		215		220
Lys Lys Lys Gln Ile Glu Tyr Lys Glu Gln Phe Val Asp Pro Asn Glu					
225		230		235	240
Pro Ile Arg Leu Asn Lys Phe Leu Ala Asn Ala Gly Val Cys Ser Arg					
	245		250		255
Arg Glu Ala Asp Glu Phe Ile Thr Ala Gly Val Val Ser Val Asn Gly					
	260		265		270
Glu Val Val Thr Glu Leu Gly Thr Lys Ile Lys Arg Ala Asp Val Val					
	275		280		285
Lys Phe His Asp Glu Thr Val Ser Ile Glu Arg Lys Val Tyr Val Leu					
	290		295		300
Leu Asn Lys Pro Lys Asp Cys Val Thr Thr Ser Asp Asp Pro Gln Ala					
305		310		315	320
Arg Leu Thr Val Met Asp Leu Val Lys Gly Ala Cys Ala Glu Arg Ile					
	325		330		335
Tyr Pro Val Gly Arg Leu Asp Arg Asn Thr Thr Gly Val Leu Leu Leu					
	340		345		350
Thr Asn Asp Gly Asp Leu Ala Ser Lys Leu Thr His Pro Lys Tyr Leu					
	355		360		365
Lys Lys Lys Ile Tyr His Val Tyr Leu Asp Lys Asn Leu Thr Lys Ala					
	370		375		380
Asp Met Asp Gln Ile Ala Ala Gly Ile Gln Leu Glu Asp Gly Glu Ile					
385		390		395	400
His Ala Asp Ala Ile Ser Tyr Ser Asp Glu Val Lys Arg Asp Gln Val					
	405		410		415
Gly Ile Glu Ile His Ser Gly Lys Asn Arg Ile Val Arg Arg Ile Phe					
	420		425		430
Glu Ser Leu Gly Tyr Lys Val Val Lys Leu Asp Arg Val Phe Phe Ala					
	435		440		445
Gly Leu Thr Lys Lys Gly Leu Arg Arg Gly Glu Trp Arg Tyr Leu Thr					
	450		455		460
Glu Gln Glu Val Asn Phe Leu Arg Met Gly Ser Phe Glu					
465		470		475	

<211> 208
 <212> PRT
 <213> B.fragilis

<400> 8297

Lys	Ile	Arg	Leu	Gly	Thr	Thr	Tyr	Ser	Leu	Asp	His	Pro	Glu	Lys	Phe
1			5					10						15	
Leu	Ser	Glu	Lys	Ala	Ile	Ala	Arg	Arg	Gln	Arg	Gln	Gln	Leu	Pro	Val
		20					25						30		
Asp	Ser	Thr	Asp	Leu	Pro	Val	Cys	Arg	Arg	Tyr	Val	Asp	Ala	Ile	Arg
		35					40					45			
Asp	Arg	Gly	Val	Lys	Ile	Val	Ala	Met	Gly	Lys	Trp	Asp	Asn	Phe	Val
	50				55						60				
Thr	Val	Ser	Cys	Asn	Asp	Ser	Ala	Val	Ile	Gly	Glu	Ile	Ala	Ala	Leu
65				70					75						80
Pro	Phe	Val	Arg	Ala	Thr	Glu	Lys	Ile	Trp	Val	Ala	Pro	Ser	Lys	Pro
			85					90						95	
Ala	Ala	Glu	Asp	Lys	Arg	Asp	Ser	Leu	Ala	Asn	Ser	Pro	Leu	Lys	Ser
		100					105						110		
Glu	Asn	Tyr	Tyr	Ser	Pro	Ala	Leu	Arg	Gln	Ile	Glu	Ile	Ser	Tyr	Gly
	115					120						125			
Glu	Lys	Leu	His	Glu	Ala	Gly	Phe	Lys	Gly	Gln	Gly	Met	Thr	Ile	Ala
	130				135					140					
Val	Ile	Asp	Ala	Gly	Tyr	His	Asn	Val	Asp	Lys	Ile	Glu	Ala	Met	Lys
145				150					155						160
Asn	Ile	Arg	Ile	Leu	Ser	Thr	Lys	Asp	Phe	Val	Lys	Pro	Gly	Ser	Asp
			165					170						175	
Ile	Tyr	Ala	Lys	Gly	Ser	His	Gly	Met	Ala	Val	Leu	Ser	Cys	Met	Ala
		180					185						190		
Met	Asn	Asp	Pro	Tyr	Leu	Met	Val	Gly	Thr	Gly	Pro	Glu	Ala	Ser	Tyr
		195				200						205			

<210> 8298
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 8298

Ile	Val	Lys	Thr	Val	Asn	Lys	Met	Thr	Ser	Gln	Lys	Ser	Gln	Asn	Ser
1			5					10						15	
Asn	Met	Leu	Leu	Ala	Phe	Leu	Thr	Leu	Leu	Gly	Val	Ile	Val	Leu	Val
		20					25						30		
Ala	Val	Val	Gly	Phe	Phe	Met	Leu	Arg	Lys	Gly	Pro	Glu	Ile	Ile	Gln
		35				40						45			
Gly	Gln	Ala	Glu	Val	Thr	Glu	Tyr	Arg	Val	Ser	Ser	Lys	Val	Pro	Gly
	50				55						60				
Arg	Ile	Leu	Glu	Phe	Arg	Val	Lys	Glu	Gly	Gln	Lys	Val	Gln	Ala	Gly
65				70					75						80
Asp	Thr	Leu	Ala	Ile	Leu	Glu	Ala	Pro	Asp	Val	Ile	Ala	Lys	Met	Glu
			85					90						95	
Gln	Ala	Arg	Ala	Ala	Glu	Ala	Ala	Ala	Gln	Ala	Gln	Asn	Glu	Lys	Ala
		100					105						110		
Ile	Lys	Gly	Ala	Arg	Gln	Glu	Gln	Ile	Gln	Ala	Ala	Tyr	Glu	Met	Trp
		115				120						125			
Gln	Lys	Ala	Ile	Ala	Gly	Val	Asp	Ile	Ala	Glu	Lys	Ser	Tyr	Lys	Arg
	130				135						140				
Val	Lys	Asn	Leu	Phe	Asp	Gln	Gly	Val	Met	Pro	Ala	Gln	Lys	Leu	Asp
145				150					155						160
Glu	Val	Thr	Ala	Gln	Arg	Asn	Ala	Ala	Ile	Ala	Thr	Glu	Lys	Ala	Ala

Lys

[illegible]

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<210> 8300
<211> 138
<212> PRT
<213> B.fragilis
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<400> 8300

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Asp Ser Ser Tyr Ser Ile Glu Arg Cys Gly Ser Met Thr Leu Glu Glu
1      5      10      15
Ile Leu Gln Ile Glu Ala Gln Asn Val Asp Cys Ile Phe Leu Tyr Gln
20      25      30
Glu Glu Gly Ala Trp Tyr Ala Tyr Glu His Ser Ala Phe Tyr Cys Tyr
35      40      45
Ser Leu Leu Gly Ile Leu Asp Ile Asp Trp Leu Pro Cys Pro Asp Gly
50      55      60
Val Ser Ser Gly Gln Lys Thr Ile Arg Val Arg Val Ser Glu Pro Asp
65      70      75      80
Lys Phe Leu Cys Thr Pro Leu Leu Arg Leu Met Arg Lys Arg Lys Thr
85      90      95
Glu Tyr Val Val Leu Cys Lys Ile Ser Cys Gly Gly Phe Tyr Tyr Trp
100      105      110
Arg Glu Gln Gln Gln Met Lys Phe Arg Val Leu Gln Glu Arg Glu Ser
115      120      125
Ser Cys Thr Lys Ile Asn Glu His Ala Glu
130      135

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<210> 8301

<211> 478

<212> PRT

<213> B.fragilis

<400> 8301

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Ser Leu Leu Tyr Lys Leu Ser Leu Pro Leu Cys Leu Ile Thr Gln Glu
1      5      10      15
Lys Glu Leu Ile Leu Gln Pro Asp Asn Tyr Leu Asn Asp Asn Met Lys
20      25      30
Leu Asp Leu Leu Thr Ala Ile Ser Pro Ile Asp Gly Arg Tyr Arg Gly
35      40      45
Lys Ala Glu Ala Leu Ala Ala Tyr Phe Ser Glu Tyr Ala Leu Ile Lys
50      55      60
Tyr Arg Val Gln Val Glu Val Glu Tyr Phe Ile Thr Leu Cys Glu Leu
65      70      75      80
Pro Leu Pro Gln Leu Lys Gly Ile Asp Lys Ser Val Phe Glu Ser Leu
85      90      95
Arg Asn Ile Tyr Arg Asn Phe Thr Glu Ala Asp Ala Gln Arg Ile Lys
100      105      110
Asp Ile Glu Ser Val Thr Asn His Asp Val Lys Ala Val Glu Tyr Phe
115      120      125
Leu Lys Glu Glu Phe Asp Lys Leu Gly Gly Leu Glu Glu Tyr Lys Glu
130      135      140
Phe Ile His Phe Gly Leu Thr Ser Gln Asp Ile Asn Asn Thr Ser Ile
145      150      155      160
Pro Leu Ser Ile Lys Glu Ala Leu Glu Gln Val Tyr Tyr Pro Leu Ile
165      170      175
Glu Glu Leu Ile Ala Gln Leu Lys Thr Tyr Ala Thr Glu Trp Glu Ser
180      185      190
Ile Pro Met Leu Ala Lys Thr His Gly Gln Pro Ala Ser Pro Thr Arg
195      200      205
Leu Gly Lys Glu Ile Met Val Phe Val Tyr Arg Leu Glu Arg Gln Leu
210      215      220
Ala Thr Leu Lys Ala Cys Pro Val Thr Ala Lys Phe Gly Gly Ala Thr
225      230      235      240
Gly Asn Tyr Asn Ala His His Val Ala Tyr Pro Glu Tyr Asp Trp Lys
245      250      255

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Ala Phe Gly Asn Gln Phe Val Ala Glu Lys Leu Gly Leu Glu Arg Glu
 260 265 270
 Glu Tyr Thr Thr Gln Ile Ser Asn Tyr Asp Asn Leu Ser Ala Ile Phe
 275 280 285
 Asp Ala Met Lys Arg Ile Asn Thr Val Met Ile Asp Met Asn Arg Asp
 290 295 300
 Phe Trp Gln Tyr Ile Ser Met Glu Tyr Phe Lys Gln Lys Ile Lys Ala
 305 310 315 320
 Gly Glu Val Gly Ser Ser Ala Met Pro His Lys Val Asn Pro Ile Asp
 325 330 335
 Phe Glu Asn Ala Glu Gly Asn Leu Gly Ile Ala Asn Ala Ile Leu Glu
 340 345 350
 His Leu Ala Val Lys Leu Pro Val Ser Arg Leu Gln Arg Asp Leu Thr
 355 360 365
 Asp Ser Thr Val Leu Arg Asn Val Gly Thr Pro Phe Gly His Ile Val
 370 375 380
 Ile Ala Ile Gln Ser Ser Leu Lys Gly Leu Arg Lys Leu Leu Leu Asn
 385 390 395 400
 Glu Thr Ala Ile Tyr Arg Asp Leu Asp Asn Cys Trp Ser Val Val Ala
 405 410 415
 Glu Ala Ile Gln Thr Ile Leu Arg Arg Glu Ala Tyr Pro His Pro Tyr
 420 425 430
 Glu Ala Leu Lys Ala Leu Thr Arg Thr Asn Gln Ala Ile Thr Glu Thr
 435 440 445
 Ser Ile Lys Glu Phe Ile Glu Gly Leu Asp Val Asn Glu Glu Ile Lys
 450 455 460
 Lys Glu Leu Arg Val Ile Thr Pro His Ser Tyr Thr Gly Ile
 465 470 475

<210> 8302

<211> 642

<212> PRT

<213> B.fragilis

<400> 8302

Pro Glu Asn His Phe Asn Lys Asn Asn Met Lys Lys Ile Thr Phe Ile
 1 5 10 15
 Ala Ile Leu Leu Leu Cys Ile Cys Ser Leu Thr Lys Ala Lys Glu Lys
 20 25 30
 Val Ile Glu Gln Pro Pro Phe Ile Ala Trp Thr Ser Thr Ser Ile Gln
 35 40 45
 Val Asp Lys Val Val Leu Ser Asp Thr Ala Thr Val Leu Tyr Ile Lys
 50 55 60
 Ala Phe Tyr His Pro Lys Gln Trp Ile Arg Ile Ser Gly Gln Ser Phe
 65 70 75 80
 Leu Lys Asp Asn Asn Gly Glu Thr Tyr Thr Leu Arg Ser Gly Ile Gly
 85 90 95
 Ile Lys Pro Asp Thr Glu Phe Trp Met Pro Glu Ser Gly Glu Gly Glu
 100 105 110
 Phe Arg Leu Val Phe Pro Pro Ile Pro Ala Ser Ala Thr Ser Ile Asp
 115 120 125
 Phe Ser Glu Gly Asp Asn Val Gln Gly Ala Phe Lys Ile Trp Gly Ile
 130 135 140
 Gln Leu Lys Gly Lys Ala Leu Pro Glu Leu Leu Leu Pro Gln Glu Ala
 145 150 155 160
 Ile Val His Lys Ile Asp Ile Asn Asp Glu Leu Pro Glu Pro Lys Ile
 165 170 175
 Glu Tyr Lys Asp Ala Thr Ile Lys Gly Arg Ile Leu Asp Tyr Arg Pro
 180 185 190

Gly	Leu	Val	Ser	Lys	Ile	Val	Pro	Ile	Ile	Phe	Asp	Pro	Val	Lys	Gly
		195					200					205			
Ala	Tyr	Glu	Ser	Glu	Glu	Val	Lys	Ile	Asn	Asn	Asp	Gly	Thr	Phe	Val
		210					215				220				
Thr	Arg	Val	Lys	Val	Pro	Thr	Thr	Thr	Ser	Ala	Ala	Ile	Arg	Leu	Phe
225					230					235					240
Gly	Lys	Met	Ile	Thr	Phe	Tyr	Ala	Val	Pro	Gly	Glu	Glu	Ser	Ser	Val
				245					250					255	
Ile	Ile	Asn	Thr	Arg	Glu	Leu	Cys	Arg	Gln	Gln	Ser	Lys	Phe	His	Lys
				260				265						270	
Asp	Asp	Lys	Pro	Tyr	Gly	Glu	Ala	Val	Tyr	Phe	Gly	Gly	Thr	Leu	Ala
		275					280					285			
Gly	Leu	Ser	Gln	Glu	Tyr	Ser	Asn	Cys	Thr	Leu	Lys	Thr	Ser	Ile	Leu
		290				295					300				
Asn	Asp	Tyr	Arg	Gln	Leu	Phe	Lys	Asp	Val	Ala	Gly	Met	Asp	Ala	Gly
305					310					315					320
Ala	Tyr	Lys	Asp	Phe	Ile	Tyr	Gly	Lys	Arg	Ala	Asn	Leu	Leu	Ala	Ser
				325					330					335	
Ile	Glu	Lys	Ala	Pro	Ile	Ser	Lys	Ala	Leu	Lys	Ala	Val	Leu	Gly	Asn
			340					345						350	
Gln	Val	Asp	Ala	Glu	Ala	Ala	Gln	Ala	Ile	Ser	Leu	Thr	Glu	Met	Val
		355					360					365			
Ile	Lys	Gln	Ala	Tyr	Thr	Met	Glu	His	Lys	Met	Ser	Lys	Glu	Glu	Ala
		370				375					380				
Arg	Glu	Tyr	Phe	Asn	Thr	Ala	Gln	Ile	Glu	Leu	Pro	Glu	Asn	Tyr	Tyr
385					390					395					400
Ala	Asn	Ala	Phe	Arg	Pro	Leu	Ala	Ser	Ile	Asn	Thr	Met	Ala	Ala	Leu
				405					410					415	
Tyr	Asn	Ser	Lys	Leu	Ser	Glu	Leu	Ile	Pro	Tyr	Tyr	Leu	Arg	Arg	Arg
			420					425					430		
Thr	Asp	Glu	Leu	Thr	Lys	Ala	Trp	Gly	Thr	Asp	Lys	Gly	Ile	Tyr	Phe
		435					440					445			
Asp	Ile	Asn	Lys	Ala	Gly	Glu	Leu	Tyr	Ser	Ser	Ile	Lys	Glu	Phe	Thr
		450				455					460				
Pro	Leu	Thr	Ala	Glu	Gln	Glu	Val	Ile	Leu	Ala	Thr	Leu	Pro	Pro	Ala
465					470					475					480
Cys	Gln	Asn	Glu	Val	Arg	Asp	Ala	Asn	Asn	Gln	Leu	Leu	Lys	Thr	Leu
				485					490					495	
Glu	Ala	Asn	Lys	Lys	Lys	Thr	Gly	Phe	Thr	Ile	Asn	Glu	Val	Gly	Asp
				500				505						510	
Val	Ser	Asn	Glu	Glu	Leu	Phe	Ser	Ser	Ile	Ile	Ser	Lys	Tyr	Arg	Gly
		515					520					525			
Lys	Val	Ile	Leu	Val	Asp	Phe	Trp	Ala	Thr	Trp	Cys	Gly	Pro	Cys	Arg
		530				535					540				
Met	Ala	As													

<210> 8303
 <211> 344
 <212> PRT
 <213> B.fragilis

<400> 8303

Leu	Ile	Thr	Asn	Asp	Met	Lys	Glu	Ile	Asp	Trp	Ala	Asn	Leu	Ser	Phe
1			5					10					15		
Gly	Tyr	Met	Lys	Thr	Asp	Tyr	Asn	Val	Arg	Ile	Asn	Phe	Arg	Asn	Gly
			20				25					30			
Ala	Trp	Gly	Glu	Leu	Glu	Ile	Ser	Ser	Ser	Glu	Val	Leu	Asn	Leu	His
		35				40					45				
Met	Ala	Ala	Thr	Cys	Leu	His	Tyr	Gly	Gln	Glu	Ala	Phe	Glu	Gly	Leu
	50				55					60					
Lys	Ala	Phe	Arg	Gly	Lys	Asp	Gly	Lys	Val	Arg	Ile	Phe	Arg	Leu	Glu
65				70					75					80	
Glu	Asn	Ala	Ala	Arg	Leu	Gln	Ser	Thr	Cys	Gln	Gly	Ile	Met	Met	Ala
			85			90						95			
Glu	Leu	Pro	Thr	Glu	Arg	Phe	Lys	Glu	Ala	Ile	Leu	Lys	Val	Val	Lys
		100				105						110			
Leu	Asn	Glu	Arg	Phe	Ile	Pro	Pro	Tyr	Glu	Ser	Gly	Ala	Ser	Leu	Tyr
	115					120						125			
Ile	Arg	Pro	Leu	Leu	Ile	Gly	Thr	Ser	Ala	Gln	Val	Gly	Val	His	Pro
	130				135						140				
Ala	Asp	Glu	Tyr	Met	Phe	Val	Val	Phe	Val	Thr	Pro	Val	Gly	Pro	Tyr
145				150					155					160	
Phe	Lys	Gly	Gly	Phe	Ser	Thr	Asn	Pro	Tyr	Val	Ile	Ile	Arg	Glu	Tyr
			165					170					175		
Asp	Arg	Ala	Ala	Pro	His	Gly	Thr	Gly	Ile	Tyr	Lys	Val	Gly	Gly	Asn
		180					185					190			
Tyr	Ala	Ala	Ser	Leu	Arg	Ala	Asn	Lys	Lys	Ala	His	Asp	Leu	Gly	Tyr
	195					200					205				
Ser	Cys	Glu	Phe	Tyr	Leu	Asp	Ala	Lys	Asp	Lys	Lys	Tyr	Ile	Asp	Glu
	210				215						220				
Cys	Gly	Ala	Ala	Asn	Phe	Phe	Gly	Ile	Lys	Asp	Asn	Thr	Tyr	Ile	Thr
225				230						235				240	
Pro	Lys	Ser	Thr	Ser	Ile	Leu	Pro	Ser	Ile	Thr	Asn	Lys	Ser	Leu	Met
			245					250					255		
Gln	Leu	Ala	Glu	Asp	Met	Gly	Met	Lys	Val	Glu	Arg	Arg	Pro	Val	Pro
		260					265						270		
Glu	Glu	Glu	Leu	Ser	Thr	Phe	Glu	Glu	Ala	Gly	Ala	Cys	Gly	Thr	Ala
		275					280				285				
Ala	Val	Ile	Ser	Pro	Ile	Glu	Arg	Ile	Asp	Asp	Leu	Glu	Asn	Gly	Lys
	290				295						300				
Ser	Tyr	Val	Ile	Ser	Lys	Asp	Gly	Lys	Pro	Gly	Pro	Val	Cys	Glu	Lys
305				310						315				320	
Leu	Tyr	Asn	Lys	Leu	Arg	Gly	Ile	Gln	Tyr	Gly	Asp	Glu	Pro	Asp	Thr
			325					330					335		
His	Gly	Trp	Val	Thr	Ile	Val	Glu								
			340												

<210> 8304
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 8304

Met	Asn	Tyr	Lys	Ile	Thr	Thr	Leu	Ala	Glu	Asn	Ser	Val	Tyr	Gly	Lys
1			5						10					15	

Gly Leu Gln Gly Glu His Gly Leu Ser Leu Leu Val Glu Ala Gly Glu
 20 25 30
 His Lys Val Leu Phe Asp Thr Gly Ala Ser Asp Leu Phe Leu Arg Asn
 35 40 45
 Ala Arg Leu Leu Gly Leu Asp Leu Ser Asp Val Glu Tyr Val Val Leu
 50 55 60
 Ser His Gly His Arg Asp His Thr Gly Gly Leu Tyr Ala Phe Leu Lys
 65 70 75 80
 Met Asn Ser Val Ala Lys Val Val Cys Lys Arg Glu Val Phe Arg Lys
 85 90 95
 Lys Phe Lys Asn Glu Arg Glu Asn Gly Met Leu His Pro Glu Ala Leu
 100 105 110
 Asp Lys Ser Arg Phe Trp Leu Val Asp Glu Thr Thr Glu Ile Val Pro
 115 120 125
 Gly Val Phe Ala Phe Pro Asp Val Lys Val Val Asp Arg Asn Asp Thr
 130 135 140
 His Phe Glu His Phe Phe Thr Glu Ile Glu Gly Glu Met Arg Pro Asp
 145 150 155 160
 Thr Phe Glu Asp Glu Leu Ala Leu Val Leu Lys Gly Glu Lys Ser Leu
 165 170 175
 Ser Val Leu Ser Ala Cys Ser His Arg Gly Ile Thr Asn Ile Ile Arg
 180 185 190
 Ala Val Gln Asn Ala Phe Pro Gly Leu Gly Leu Lys Leu Val Met Gly
 195 200 205
 Gly Phe His Ile His Asn Ala Glu Glu Glu Lys Phe Asn Val Ile Ser
 210 215 220
 Ala Phe Leu Gly Met Lys Leu Pro Lys Arg Leu Gly Val Cys His Cys
 225 230 235 240
 Thr Gly Ile Asp Lys Tyr Ala Leu Phe Arg Gln Gln Phe Asn Asp Arg
 245 250 255
 Val Phe Tyr Asn Tyr Thr Gly Trp Val Glu Thr Ile
 260 265

<210> 8305

<211> 282

<212> PRT

<213> B.fragilis

<400> 8305

Arg Lys Asn Lys Met Ser Arg Thr Asn Phe Asp Thr Leu Leu Glu Ala
 1 5 10 15
 Gly Cys His Phe Gly His Leu Lys Arg Lys Trp Asn Pro Ala Met Ala
 20 25 30
 Pro Tyr Ile Phe Met Glu Arg Asn Gly Ile His Ile Ile Asp Leu His
 35 40 45
 Lys Thr Val Ala Lys Val Asp Glu Ala Ala Glu Ala Leu Lys Gln Ile
 50 55 60
 Ala Lys Ser Gly Lys Lys Val Leu Phe Val Ala Thr Lys Lys Gln Ala
 65 70 75 80
 Lys Gln Val Val Ala Glu Lys Ala Ala Ser Val Asn Met Pro Tyr Val
 85 90 95
 Ile Glu Arg Trp Pro Gly Gly Met Leu Thr Asn Phe Pro Thr Ile Arg
 100 105 110
 Lys Ala Val Lys Lys Met Thr Thr Ile Asp Lys Leu Thr Ala Asp Gly
 115 120 125
 Thr Tyr Ser Asn Leu Ser Lys Arg Glu Ile Leu Gln Ile Ser Arg Gln
 130 135 140
 Arg Ala Lys Leu Asp Lys Thr Leu Gly Ser Ile Ala Asp Leu Thr Arg
 145 150 155 160

Leu Pro Ser Ala Leu Phe Val Ile Asp Val Met Lys Glu Asn Ile Ala
 165 170 175
 Val Arg Glu Ala Asn Arg Leu Gly Ile Pro Val Phe Gly Ile Val Asp
 180 185 190
 Thr Asn Ser Asp Pro Thr Asn Ile Asp Phe Val Ile Pro Ala Asn Asp
 195 200 205
 Asp Ala Thr Lys Ser Val Glu Val Ile Leu Asp Ala Cys Cys Ala Ala
 210 215 220
 Met Ile Glu Gly Leu Glu Arg Lys Ala Glu Lys Ile Asp Met Glu
 225 230 235 240
 Ala Ala Gly Glu Ala Pro Ala Asn Lys Gly Lys Lys Lys Ser Ala Lys
 245 250 255
 Ala Arg Leu Asp Lys Ser Asp Glu Glu Ala Ile Asn Ala Ala Lys Ala
 260 265 270
 Ala Ala Phe Leu Lys Glu Asp Glu Glu Ala
 275 280

<210> 8306
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 8306
 Gln Lys Asn Asn Arg Lys Pro Met Asn Ala Val Ala Glu Leu Leu Pro
 1 5 10 15
 Ala Phe Pro Gln Gly His Thr Ser Ile Tyr Leu Lys Cys Tyr Tyr Ile
 20 25 30
 Val Leu Ser Phe Asn Ser Thr Thr Lys Gly Ile Glu Gln Lys Arg Glu
 35 40 45
 Ile Lys Lys Ile Ala Lys Ser Ile Cys Leu Leu Gln Lys Glu Ser Val
 50 55 60
 Tyr Leu Lys Tyr Lys Lys Thr Gln Ile Trp Gln Thr Pro Asn Tyr Arg
 65 70 75 80
 Glu Tyr Pro Lys Leu Asn Lys Leu Cys Cys Met Pro Asn
 85 90

<210> 8307
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 8307
 His Ile Thr Lys Met Lys Lys Gln Ile Ile His Arg Trp Met Leu Met
 1 5 10 15
 Ala Val Phe Cys Leu Gly Ala Ser Leu Ile Gly Ile Asn Ala Gln Glu
 20 25 30
 Lys Asp Trp Ala Asn Leu Gln Arg Tyr Ala Gln Gln Asn Ala Glu Leu
 35 40 45
 Pro Lys Pro Asp Lys Asn Glu Lys Arg Val Val Phe Met Gly Asn Ser
 50 55 60
 Ile Thr Glu Gly Trp Val Asn Thr His Pro Asp Phe Phe Lys Ser Asn
 65 70 75 80
 Gly Tyr Ile Gly Arg Gly Ile Gly Gly Gln Thr Ser Tyr Gln Phe Leu
 85 90 95
 Val Arg Phe Arg Glu Asp Val Ile Asn Leu Ser Pro Ala Leu Val Val
 100 105 110
 Ile Asn Ala Ala Thr Asn Asp Ile Ala Glu Asn Thr Gly Ala Tyr His
 115 120 125
 Glu Asp Arg Thr Phe Gly Asn Ile Val Ser Met Val Glu Leu Ala Lys

130	135	140
Ala Asn His Ile Lys Val	Ile Leu Thr Thr Thr	Leu Pro Ala Ala Ala
145	150	155
Phe Gly Trp Asn Pro Ala	Ile Lys Asp Ala Pro	Gln Lys Ile Ala Ser
	165	170
Leu Asn Ala Arg Leu Lys	Ala Tyr Ala Gln Thr	Asn Lys Ile Pro Phe
	180	185
Val Asp Tyr Tyr Ser Ser	Met Val Ser Gly Ser	Asn Lys Ala Leu Asn
	195	200
Pro Ala Tyr Thr Lys Asp	Gly Val His Pro Thr	Ser Glu Gly Tyr Asp
	210	215
Val Met Glu Asn Leu Ile	Gln Gln Ala Ile Asn	Lys Thr Leu Arg
225	230	235

<210> 8308

<211> 160

<212> PRT

<213> B.fragilis

<400> 8308

His Leu Lys Asn Lys Leu Arg	Val Asp Thr Leu Ser Tyr Lys Thr Ile
1	5
Ser Ala Asn Lys Ala Thr Val Thr	Lys Glu Trp Val Ile Val Asp Ala
	20
Thr Asp Gln Thr Leu Gly Arg Leu Gly	Ala Lys Val Ala Lys Leu Leu
	35
Arg Gly Lys Tyr Lys Pro Asn Phe Thr	Pro His Val Asp Cys Gly Asp
	50
Asn Val Ile Ile Ile Asn Ala Asp Lys	Val Lys Leu Ser Gly Asn Lys
65	70
Trp Asn Asp Arg Val Tyr Leu Ser Tyr	Thr Gly Tyr Pro Gly Gly Gln
	85
Arg Glu Met Thr Pro Ala Arg Leu Ile	Ala Lys Pro Asn Gly Glu Asp
	100
Arg Leu Leu Arg Lys Val Val Lys Gly	Met Leu Pro Lys Asn Arg Leu
	115
Gly Ala Lys Leu Leu Ser Asn Met Tyr	Val Tyr Ala Gly Ser Glu His
	130
Lys His Asp Ala Gln Asn Pro Lys Ala	Ile Asp Ile Asn Ser Leu Lys
145	150

<210> 8309

<211> 252

<212> PRT

<213> B.fragilis

<400> 8309

Met Gly Lys Asn Lys Leu Glu Lys Phe	Ala Asp Met Ala Ser Tyr Pro
1	5
His Val Phe Glu Tyr Pro Tyr Ser Ala	Val Asp Asn Val Pro Phe Asp
	20
Met Lys Gly Lys Trp His Lys Glu Phe	Phe Lys Asn Asp Asn Pro Ile
	35
Val Leu Glu Leu Gly Cys Gly Arg Gly	Glu Tyr Thr Val Gly Leu Gly
	50
Arg Met Phe Pro Asp Lys Asn Phe Ile	Ala Val Asp Ile Lys Gly Ala
65	70
Arg Met Trp Thr Gly Ala Thr Glu Ser	Leu Gln Ala Gly Met Lys Asn
	85

Val Ala Phe Leu Arg Thr Asn Ile Glu Ile Ile Asp Arg Phe Phe Ala
 100 105 110
 Glu Gly Glu Val Ser Glu Ile Trp Leu Thr Phe Ser Asp Pro Gln Met
 115 120 125
 Lys Lys Ala Thr Lys Arg Leu Thr Ser Thr Tyr Phe Met Glu Arg Tyr
 130 135 140
 Arg Lys Phe Leu Val Ser Asn Gly Ile Ile His Leu Lys Thr Asp Ser
 145 150 155 160
 Asn Phe Met Phe Thr Tyr Thr Glu Tyr Met Ile Glu Glu Asn Gly Leu
 165 170 175
 Pro Val Glu Phe Ile Thr Glu Asp Leu Tyr His Ser Asp Leu Val Asp
 180 185 190
 Asp Ile Leu Gly Ile Lys Thr Tyr Tyr Glu Gln Gln Trp Leu Asp Arg
 195 200 205
 Gly Leu Ser Ile Lys Tyr Ile Lys Phe Leu Leu Pro Gln Glu Gly Glu
 210 215 220
 Leu Arg Glu Pro Asp Ile Glu Ile Glu Leu Asp Ser Tyr Arg Ser Tyr
 225 230 235 240
 Asn Arg Ser Lys Arg Ser Gly Leu Gln Thr Ser Lys
 245 250

<210> 8310

<211> 486

<212> PRT

<213> B.fragilis

<400> 8310

Asp Ala Met Lys Lys Leu Leu Phe Leu Phe Phe Leu Leu Thr Thr Pro
 1 5 10 15
 Phe Ser Leu Lys Ser Gln Gly Ile Leu Ser Leu Asp Ser Cys Arg Ala
 20 25 30
 Leu Ala Ile Ala Asn Asn Lys Glu Leu Leu Ile Ser Gly Glu Lys Ile
 35 40 45
 Asn Ala Ala His Tyr Gln Lys Lys Ala Ala Phe Thr Asn Tyr Leu Pro
 50 55 60
 Asn Phe Ser Ala Thr Gly Ala Tyr Met Arg Asn Gln Lys Glu Phe Ser
 65 70 75 80
 Leu Leu Asn Asn Asp Gln Lys Ala Ala Leu Ser Gly Leu Gly Thr Ser
 85 90 95
 Val Ser Gly Pro Leu Gln Gln Ala Ala Gln Val Ile Gly Gln Leu His
 100 105 110
 Pro Glu Leu Ala Pro Met Leu Ser Gln Leu Gly Gly Ala Ile Val Pro
 115 120 125
 Ala Leu Asn Glu Ala Gly Thr Ala Ile Val Asp Ala Phe Arg Thr Asp
 130 135 140
 Thr Arg Asn Val Tyr Ala Gly Ala Ile Thr Leu Thr Gln Pro Leu Tyr
 145 150 155 160
 Met Gly Gly Lys Ile Arg Ala Tyr Asn Lys Ile Thr Lys Tyr Ala Glu
 165 170 175
 Glu Leu Ala Arg Gln Gln His Asn Ser Gly Met Gln Glu Val Ile Leu
 180 185 190
 Ser Thr Asp Gln Ala Tyr Trp Gln Val Ile Ser Leu Val Asn Lys Lys
 195 200 205
 Lys Leu Ala Glu Ser Tyr Leu Lys Leu Leu Gln Lys Leu Asp Ser Asp
 210 215 220
 Val Glu Lys Met Ile Ala Glu Gly Val Ala Thr Lys Ala Asp Gly Leu
 225 230 235 240
 Ser Val Arg Val Lys Val Asn Glu Ala Glu Met Thr Leu Thr Lys Val
 245 250

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Glu Asp Gly Leu Ser Leu Ser Arg Met Leu Leu Cys Gln Leu Cys Gly
 260 265 270
 Ile Asp Leu Ser Thr Pro Ile Val Leu Ala Asp Glu Gln Val Asp Asp
 275 280 285
 Leu Pro Leu Ile Pro Ala Thr Thr Asn Phe Glu Ile Glu Thr Ala Tyr
 290 295 300
 Ala Asn Arg Pro Glu Ile Arg Ser Leu Glu Leu Ala Ala Lys Ile Tyr
 305 310 315 320
 Gln Gln Lys Ile Asn Val Thr Arg Ser Glu His Leu Pro Ser Val Ala
 325 330 335
 Leu Met Gly Asn Tyr Met Val Thr Asn Pro Ser Val Phe Asn Ser Phe
 340 345 350
 Glu Asn Lys Phe Lys Gly Met Trp Asn Val Gly Val Met Val Gln Leu
 355 360 365
 Pro Ile Trp His Trp Gly Glu Gly Ile Tyr Lys Val Lys Ala Ala Lys
 370 375 380
 Ala Glu Ala Arg Ile Ala Gln Tyr Gln Leu Glu Asp Ala Lys Glu Lys
 385 390 395 400
 Ile Glu Leu Gln Val Asn Gln Ser Ala Phe Lys Val Asn Glu Ala Ala
 405 410 415
 Lys Lys Leu Ala Met Ala Lys Lys Asn Leu Glu Lys Ala Asp Glu Asn
 420 425 430
 Leu Arg Tyr Ala Thr Leu Gly Phe Glu Glu Gly Val Ile Ala Pro Ser
 435 440 445
 Asn Val Leu Glu Ala His Thr Ala Trp Leu Ser Ala Gln Ser Glu Lys
 450 455 460
 Ile Asp Ala Gln Ile Asp Val Lys Leu Thr Glu Ile Tyr Leu Gln Lys
 465 470 475 480
 Ser Leu Gly Thr Leu Lys
 485

<210> 8311

<211> 420

<212> PRT

<213> B.fragilis

<400> 8311

Ile Arg Ala Leu Met Lys Asp Ile Ser Leu Lys Asp Lys Ile Thr Gln
 1 5 10 15
 Gly Ile Asn Asp Leu Phe Tyr Ile Trp Lys Arg Glu Phe Arg Thr Thr
 20 25 30
 Phe Arg Asp Gln Gly Val Leu Ile Phe Phe Val Leu Val Pro Leu Val
 35 40 45
 Tyr Pro Leu Ile Tyr Ser Phe Ile Tyr Thr Asn Glu Val Val Arg Glu
 50 55 60
 Val Pro Ala Val Val Val Asp Asp Ser His Ser Ser Leu Ser Arg Glu
 65 70 75 80
 Tyr Leu Arg Lys Val Asp Ala Thr Pro Asp Ile Gln Ile Val Ala Tyr
 85 90 95
 Cys Ala Asp Met Glu Glu Ala Lys Gln Met Leu Lys Asp Arg Leu Ala
 100 105 110
 Tyr Gly Ile Ile Tyr Ile Pro Lys Asp Phe Ser Ser Asp Ile Ala Gln
 115 120 125
 Gly Lys Gln Thr Gln Val Ser Ile Tyr Cys Asp Met Ser Gly Leu Leu
 130 135 140
 Tyr Tyr Lys Ser Met Leu Leu Ala Asn Thr Ala Val Ser Leu Asp Met
 145 150 155 160
 Asn Glu Asp Ile Lys Ile Ala Arg Ser Gly Asn Thr Thr Asp Arg Gln
 165 170 175

Asp Glu Ile Thr Ala Tyr Pro Ile Glu Tyr Glu Asp Val Ala Met Phe
 180 185 190
 Asn Pro Thr Asn Gly Phe Ala Ala Phe Leu Ile Pro Ala Val Leu Ile
 195 200 205
 Leu Ile Ile Gln Gln Thr Leu Leu Leu Gly Ile Gly Leu Ser Ala Gly
 210 215 220
 Thr Ala Arg Glu Asn Asn Arg Phe Lys Asp Leu Val Pro Ile Asn Arg
 225 230 235 240
 His Tyr Asn Gly Thr Leu Arg Ile Val Leu Gly Lys Gly Leu Ser Tyr
 245 250 255
 Phe Met Val Tyr Ala Leu Val Ser Val Tyr Val Leu Cys Ala Val Pro
 260 265 270
 Arg Met Phe Ser Leu Asn Gln Ile Gly Gln Pro Gly Thr Leu Ala Leu
 275 280 285
 Phe Ile Leu Pro Tyr Leu Met Ala Cys Ile Phe Phe Ala Met Thr Ala
 290 295 300
 Ser Ile Ala Ile Arg Asn Arg Glu Thr Cys Met Leu Ile Phe Val Phe
 305 310 315 320
 Thr Ser Val Pro Leu Leu Phe Ile Ser Gly Ile Ser Trp Pro Gly Ala
 325 330 335
 Ala Ile Pro Pro Phe Trp Lys Tyr Phe Ser Tyr Ile Phe Pro Ser Thr
 340 345 350
 Phe Gly Ile Asn Gly Phe Val Arg Ile Asn Asn Met Gly Ala Thr Leu
 355 360 365
 Ser Glu Ile Pro Phe Glu Tyr Lys Ala Leu Trp Ile Gln Thr Gly Phe
 370 375 380
 Tyr Phe Leu Thr Thr Cys Trp Val Tyr Arg Trp Gln Ile Ile Lys Ser
 385 390 395 400
 Arg Lys His Val Ile Asp Lys Tyr Lys Glu Met Lys Asn Arg Gly Lys
 405 410 415
 Glu Phe Phe Ser
 420

<210> 8312
 <211> 681
 <212> PRT
 <213> B.fragilis

<400> 8312
 Leu Leu Leu Glu Thr Lys Ile Ile Ser Thr Phe Glu Ala Ser Ile Ser
 1 5 10 15
 Ser Cys Arg Arg Cys Lys Gln Ser Thr Tyr Asn Asn Lys Thr His Val
 20 25 30
 Met Lys Arg Lys Met Met Ser Leu Leu Leu Ala Leu Ala Val Ile Ser
 35 40 45
 Gly Ser Ser Val Tyr Ala Lys Val Ile Asp Val Met Ser Pro Asn Gly
 50 55 60
 Ala Ile Lys Val Ser Val Asp Ile Lys Asp Arg Ile Tyr Tyr Ser Val
 65 70 75 80
 Ser Tyr Asp Asn Asp Gln Leu Leu Lys Asp Cys Tyr Leu Asn Leu Gln
 85 90 95
 Leu Gln Asn Glu Thr Leu Gly Thr Asn Pro His Leu Arg Ser Thr Lys
 100 105 110
 Arg Gly Thr Ile Asp Glu Ser Val Lys Arg Glu Ile Pro Phe Lys Asn
 115 120 125
 Ala Ile Val Arg Asn His Cys Asn Thr Leu Arg Met Asn Phe Ser Gly
 130 135 140
 Asn Tyr Ala Val Glu Phe Arg Val Phe Asp Asn Gly Ile Ala Tyr Arg
 145 150 155 160

Phe	Val	Thr	Asp	Asn	Lys	Gly	Asp	Asn	Ile	Val	Met	Gly	Glu	Asp	Phe
				165					170					175	
Ala	Ile	Asn	Phe	Pro	Ala	Asn	Tyr	Lys	Ala	His	Leu	Ser	Gln	Pro	Asp
			180					185					190		
Gly	Phe	Lys	Thr	Ser	Tyr	Glu	Cys	Pro	Tyr	Thr	His	Val	Asp	Thr	Glu
		195					200					205			
Lys	Tyr	Ala	Ala	Thr	Asp	Arg	Met	Ser	Tyr	Leu	Pro	Val	Leu	Ile	Glu
	210					215					220				
Thr	Asp	Lys	Ala	Tyr	Lys	Ile	Leu	Ile	Ser	Glu	Ala	Asp	Leu	Ser	Asp
225					230					235					240
Tyr	Pro	Cys	Met	Phe	Leu	Lys	Ser	Thr	Gly	Lys	Asn	Gly	Met	Gln	Ser
				245					250					255	
Ile	Phe	Pro	Lys	Ala	Pro	Leu	Ala	Phe	Gly	Glu	Asp	Gly	Asp	Arg	Ser
			260					265					270		
Leu	Lys	Ile	Thr	Glu	Glu	Ala	Asp	Tyr	Ile	Ala	Lys	Thr	Asp	Gly	Lys
		275					280					285			
Arg	Ser	Phe	Pro	Trp	Arg	Met	Met	Val	Ile	Ser	Lys	Glu	Asp	Lys	Glu
	290					295					300				
Leu	Ile	Glu	Asn	Glu	Met	Val	Tyr	Asn	Leu	Ser	Ala	Pro	Cys	Val	Leu
305					310					315					320
Glu	Asp	Tyr	Ser	Trp	Ile	Lys	Pro	Gly	Gln	Val	Ser	Trp	Glu	Trp	Trp
			325						330					335	
His	Asp	Ala	Arg	Leu	Tyr	Gly	Val	Asp	Phe	Arg	Ser	Gly	Phe	Asn	Met
		340					345						350		
Asp	Ser	Tyr	Lys	Tyr	Tyr	Ile	Asp	Phe	Ala	Ser	Lys	Phe	Gly	Ile	Pro
		355					360					365			
Tyr	Ile	Ile	Met	Asp	Glu	Gly	Trp	Ala	Lys	Asn	Thr	Arg	Asp	Pro	Phe
	370					375					380				
Thr	Pro	Asn	Pro	Thr	Ile	Asn	Leu	Thr	Glu	Leu	Ile	Lys	Tyr	Gly	Lys
385					390					395					400
Asp	Arg	Asn	Val	Lys	Ile	Val	Leu	Trp	Leu	Pro	Trp	Leu	Thr	Val	Glu
			405						410					415	
Asn	His	Phe	Asp	Leu	Phe	Lys	Thr	Phe	Ala	Asp	Trp	Gly	Ile	Ala	Gly
		420					425						430		
Val	Lys	Ile	Asp	Phe	Met	Asp	Arg	Ser	Asp	Gln	Trp	Met	Val	Asn	Tyr
	435						440					445			
Tyr	Glu	Arg	Val	Ala	Lys	Glu	Ala	Ala	Lys	His	Lys	Leu	Phe	Val	Asp
	450					455					460				
Phe	His	Gly	Ala	Phe	Lys	Pro	Ala	Gly	Leu	Glu	Arg	Lys	Tyr	Pro	Asn
465					470					475					480
Val	Leu	Ser	Tyr	Glu	Gly	Val	Leu	Gly	Met	Glu	Gln	Gly	Gly	Asn	Cys
			485						490					495	
Lys	Pro	Glu	Asn	Ser	Ile	Tyr	Leu	Pro	Phe	Met	Arg	Asn	Ala	Val	Gly
			500					505					510		
Pro	Met	Asp	Phe	Thr	Pro	Gly	Ser	Met	Ile	Ser	Ala	Gln	Pro	Glu	Asp
		515					520					525			
Asn	Arg	Ser	Thr	Arg	Ala	Asn	Ala	Met	Gly	Ser	Gly	Thr	Arg	Ala	Phe
	530					535						540			
Gln	Met	Ala	Leu	Phe	Ile	Ile	Phe	Glu	Ser	Gly	Leu	Gln	Met	Leu	Ala
545					550					555					560
Asp	Asn	Pro	Val	Tyr	Tyr	Tyr	Arg	Glu	Leu	Pro	Cys	Thr	Glu	Phe	Ile
			565						570					575	
Thr	Ser	Val	Pro	Val	Thr	Trp	Asp	Glu	Thr	Lys	Val	Leu	Tyr	Ala	Lys
			580					585					590		
Val	Gly	Glu	Ala	Val	Val	Val	Ala	Lys	Arg	Lys	Gly	Glu	Gln	Trp	Phe
		595					600					605			
Ile	Gly	Gly	Ile	Thr	Gly	Asn	Gln	Pro	Gln	Asn	Ile	Glu	Ile	Asp	Leu
	610					615					620				
Gly	Phe	Ile	Pro	Ala	Gly	Gln	Ser	Phe	Thr	Leu	Thr	Ser	Phe	Glu	Asp

625		630		635		640									
Gly	Ile	Asn	Ala	Asp	Arg	Gln	Ala	Met	Asp	Tyr	Lys	Lys	Lys	Glu	Ser
				645					650					655	
Thr	Val	Asn	Asn	Gln	Thr	Arg	Met	Thr	Leu	Lys	Met	Val	Arg	Asn	Gly
			660					665					670		
Gly	Trp	Ala	Gly	Thr	Ile	Lys	Met	Lys							
		675					680								

<210> 8313
 <211> 460
 <212> PRT
 <213> B.fragilis

<400> 8313

Phe	Ile	Val	Asp	His	Ser	Ser	Phe	Lys	Asn	Arg	Ser	Ser	Phe	His	Ser
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Ala	Leu	Lys	Leu	His	Gln	His	Arg	Cys	Phe	His	Cys	Phe	His	Phe	Cys
			20					25					30		
Leu	Arg	Gly	Phe	Ile	Gln	Leu	Phe	Lys	Asp	Asn	Asn	Leu	Ile	Phe	Thr
		35					40					45			
Leu	Leu	Gln	Pro	Tyr	Thr	Arg	Asn	Ile	Glu	Cys	Leu	Leu	Arg	Thr	Tyr
	50					55					60				
Phe	Pro	Val	Thr	Ser	Asp	Ile	Asn	Thr	Val	His	Lys	Asn	Asp	Thr	Leu
65					70					75					80
Ser	Pro	Ala	Phe	His	Ile	His	Lys	Cys	Ile	Ser	Asp	Phe	Ile	Gln	Arg
				85					90					95	
Lys	Ser	Pro	Leu	Ile	Lys	His	Arg	Thr	Ala	Phe	Gln	Leu	Ser	His	Phe
			100					105					110		
Arg	Arg	Tyr	Ile	Phe	Met	Cys	Ile	Ser	Phe	Gln	Phe	Gly	Gln	Ile	Gly
		115					120					125			
His	Phe	Val	His	Arg	Gln	Leu	Ile	His	Ile	Pro	Ser	Thr	Asp	Asn	Phe
	130					135					140				
Leu	Pro	Gly	Tyr	Leu	Asn	Arg	Ala	Asn	Asn	Ser	Leu	Gly	Ile	Met	Tyr
145					150					155					160
Asp	Leu	Ala	Thr	Ile	Ile	Asn	Ala	Ser	His	Ile	Phe	Asn	Gln	Asn	Leu
				165					170					175	
Gln	Ser	Ser	Ile	Lys	Arg	His	Leu	Tyr	Leu	His	Gly	Val	Gly	Leu	Gly
		180						185					190		
Ile	Pro	Ile	Gln	His	Ser	Tyr	Leu	Phe	Thr	Ile	His	Ile	Asn	Asn	Gly
		195					200					205			
Ile	Val	Thr	Gln	Pro	Arg	Asn	Phe	Lys	Cys	Ser	Ala	Asn	Arg	Leu	Ile
	210					215					220				
Glu	Met	Thr	Ser	Ile	Gln	Tyr	Ile	Ser	Ile	Pro	Leu	Ile	Gln	Leu	Phe
225					230					235					240
Lys	Ser	Gln	Gly	Ser	Ile	Arg	Arg	His	Gly	Leu	Leu	Phe	Phe	Cys	Lys
			245						250					255	
Ser	Lys	Tyr	Ile	Arg	Asn	Phe	Ile	Gln	Leu	Asn	Arg	Arg	Tyr	Phe	Asp
			260					265					270		
Asn	Arg	Ile	Arg	Ser	Arg	Ser	Phe	Arg	Asn	Cys	Ile	Phe	Asn	Ile	Phe
		275					280					285			
Leu	Asp	His	Ile	Ala	Asn	Arg	Ile	Ile	Leu	Trp	Ser	Tyr	Pro	Ala	Cys
	290					295					300				
Leu	Ala	Asn	Arg	Ser	Ile	Ile	Ile	Ile	Thr	Gly	His	Ile	Arg	Leu	Asn
305					310					315					320
Ile	Thr	Leu	Leu	Ile	Ile	Ile	Ser	Thr	Thr	Arg	Lys	Thr	Lys	Ile	Arg
			325						330					335	
Thr	Ser	Met	His	His	Ile	Glu	Val	Glu	Arg	Asn	Ile	Ile	Leu	Gln	Ile
			340					345					350		
Leu	Leu	Gly	Leu	Thr	Ser	Asn	Pro	Gly	Ser	Ser	Tyr	Leu	Arg	Glu	Arg